The PHOTOFACT Servicer

SET 459 ★ *Published for all users of Howard W. Sams' Photofact Folders* ★ OCT., 1959

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This Servicer provides you with essential data on other models or special equipment not covered in standard PHOTOFACT folders. The schematics and supplementary data included here will be of valuable help to you in servicing this equipment.

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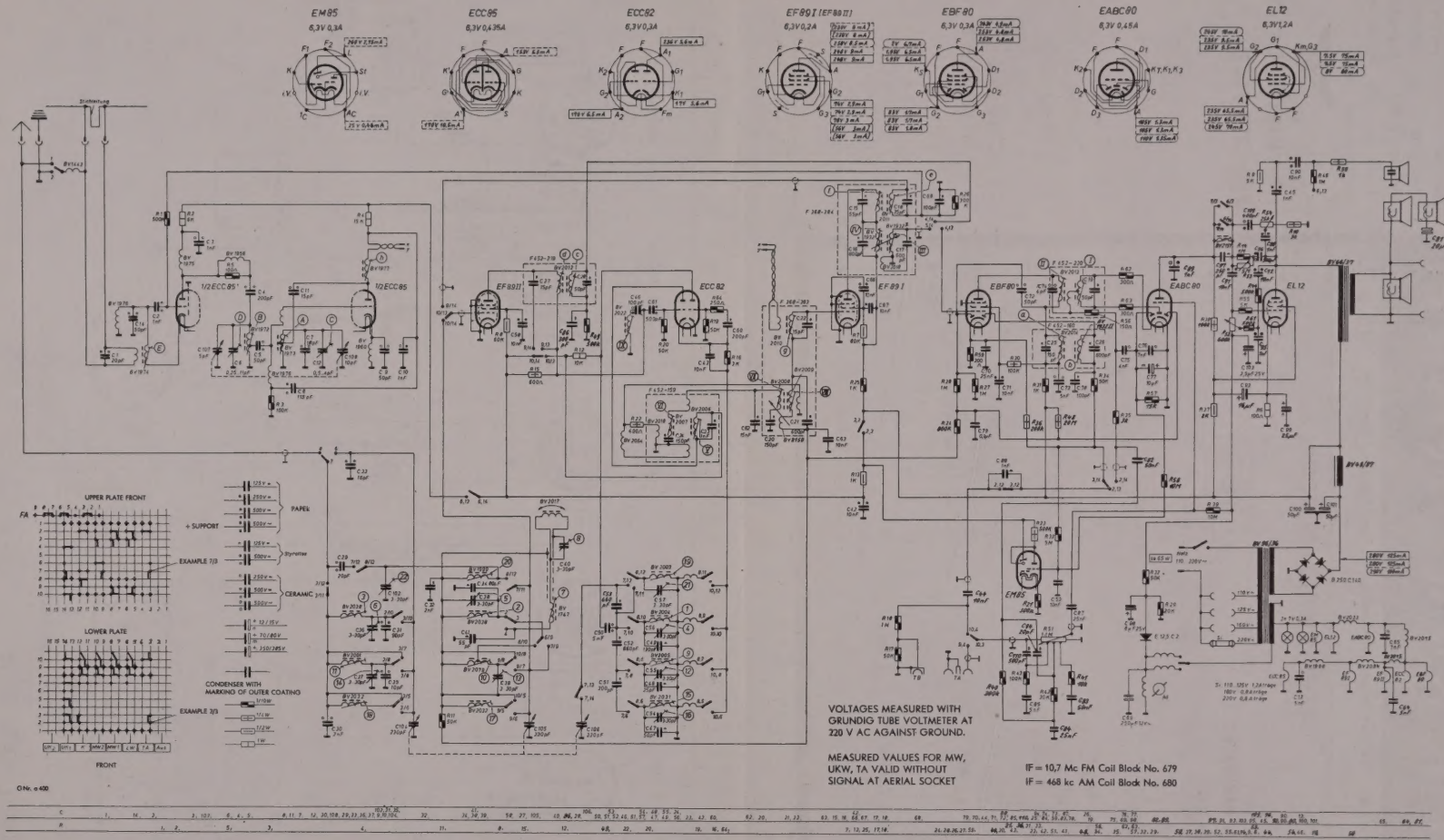
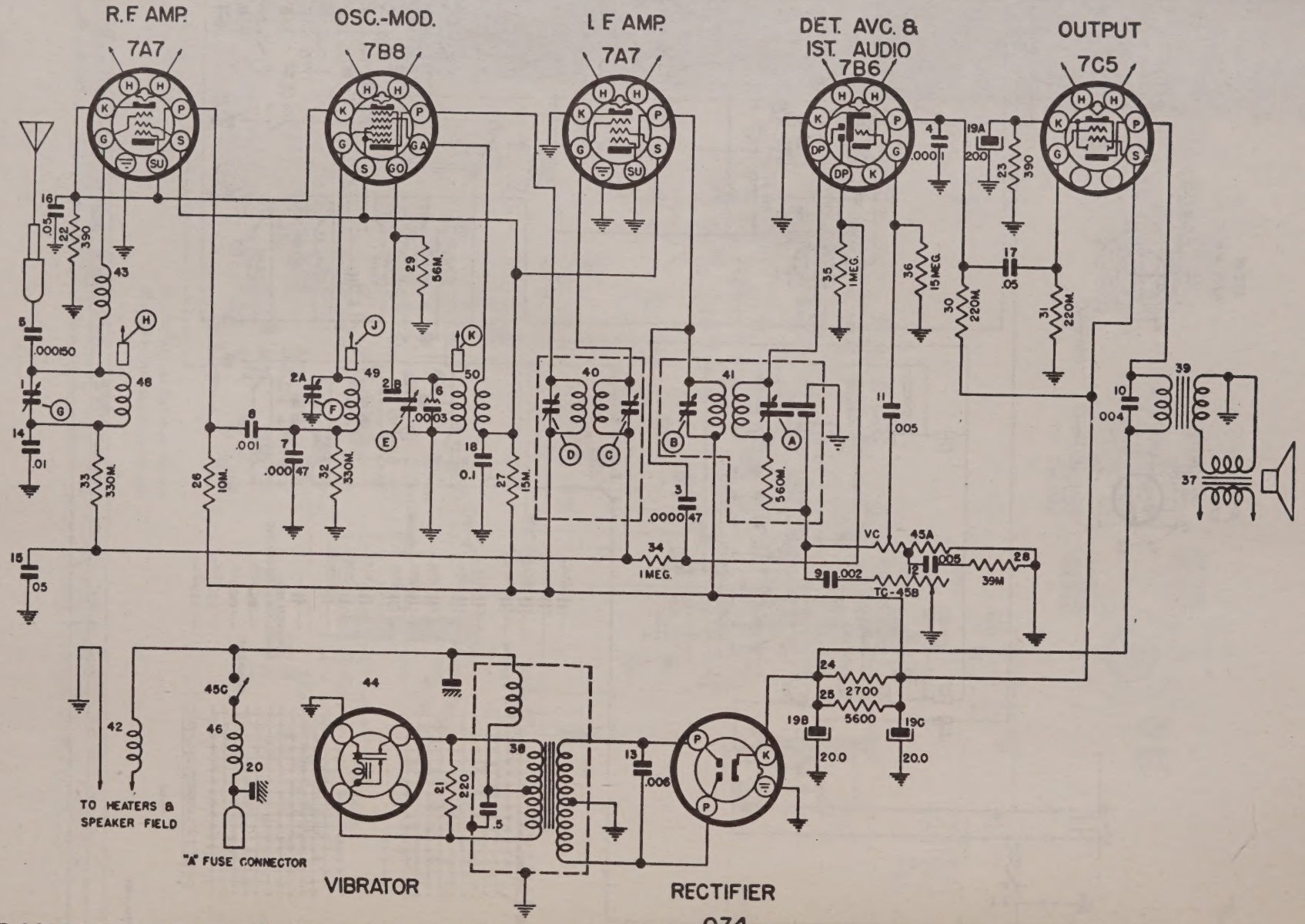
Grundig Majestic
Model 4040

Oldsmobile
Model 982376



GRUNDIG MAJESTIC MODEL 4040

Schematic Diagram Courtesy of Grundig Werke Furth Bay and Importer Majestic International Sales Corp.



OLDSMOBILE MODEL 982376

Schematic Diagram Courtesy of Delco Radio Div., General Motors Corp.

PHOTOFACT* Folder with CIRCUITRACE*

EIA MEMBER ELECTRONIC INDUSTRIES ASSOCIATION

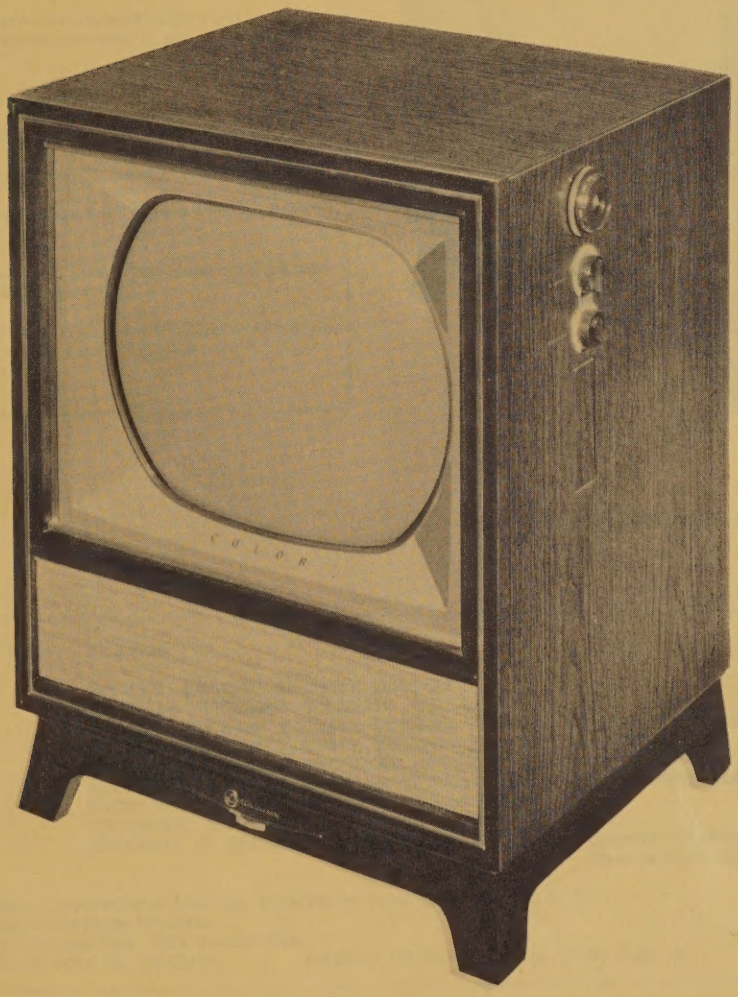
RCA VICTOR CHASSIS
CTC9A, B, F, H, N, P

IMPORTANT FILING NOTICE

The TV Folder for this envelope will be found among the first folders in this complete Set of folders.

Merely insert the corresponding folder on this model in this envelope to retain proper filing and indexing order.

RCA VICTOR CHASSIS
CTC9A, B, F, H, N, P



MODEL 210CK855 (Ch. CTC9A)

RCA VICTOR CHASSIS
CTC9A, B, F, H, N, P

HOWARD W. SAMS & CO., INC. Indianapolis 6, Indiana

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SET 459 FOLDER 1

PHOTOFACT* Folder with CIRCUITRACE*

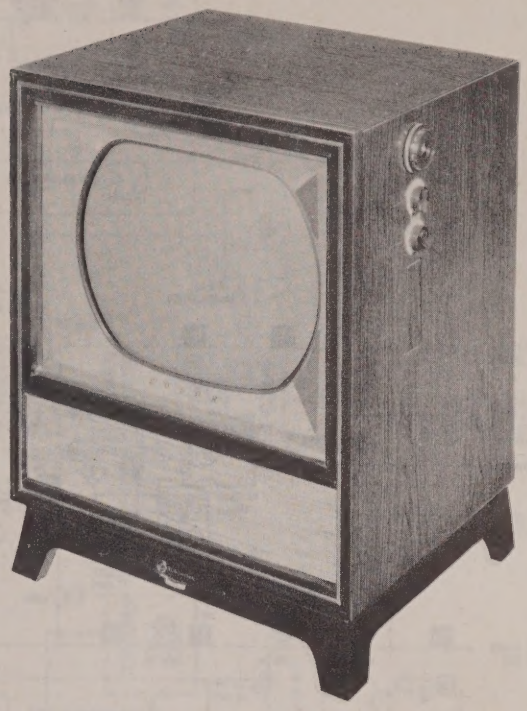
DISASSEMBLY INSTRUCTIONS

SAFETY GLASS REMOVAL

1. Remove trim channels at the top and bottom of the safety glass by prying outward starting at the extreme ends.
2. Slide the retaining bars now exposed to the right by inserting a small bladed screwdriver in the slots near the middle of bars.
3. Tilt safety glass out and remove.

CHASSIS REMOVAL 210CK855

1. Remove 10 push-on type knobs from side of cabinet.
2. Remove 4 screws and 3 clips holding rear cover. Remove rear cover.
3. Remove speaker leads, HV lead, yoke leads, picture tube socket and convergence board plug.
4. Remove 2 chassis bolts from bottom of chassis, 1 from top and 1 wood screw from top rear of chassis.
5. Remove chassis.



MODEL 210CK855 (Ch. CTC9A)

RCA VICTOR CHASSIS
CTC9A, B, F, H, N, P

TRADE NAME	RCA Victor	MODELS	CHASSIS
		210CK855, 210CK856, 210CK857, 210CT822	CTC9A
		210CK855U, 210CK856U, 210CK857U, 210CT822U	CTC9B
		210CK885, 210CK886, 210CK889, 210CK905, 210CK906, 210CK907, 210CK920, 210CK924, 210CK935, 210CK936, 210CT835, 210CT836, 210CT837	CTC9F
		210CK885U, 210CK886U, 210CK889U, 210CK905U, 210CK906U, 210CK907U, 210CK920U, 210CK924U, 21CK935U, 21CK936U, 210CT835U, 210CT836U, 210CT837U	CTC9H
		210CKR940, 210CKR946, 210CTR845, 210CTR847	CTC9N
		210CKR940U, 210CKR946U	CTC9P
		210CKR940, U, 210CKR946, U, 210CTR845, 210CTR847 (Remote Transmitter)	CRK3A
		(Remote Receiver)	CTP7A

MANUFACTURER	Radio Corporation of America, RCA Victor Tele. Div., Camden 8, N.J.
TYPE SET	Color Television Receiver
TUBES	VHF Twenty-four, UHF Twenty-five
POWER SUPPLY	110-120 Volts AC, 60 Cycle RATING 275 Watts, 3 Amp. @ 117 Volts AC

HOWARD W. SAMS & CO., INC. Indianapolis 6, Indiana

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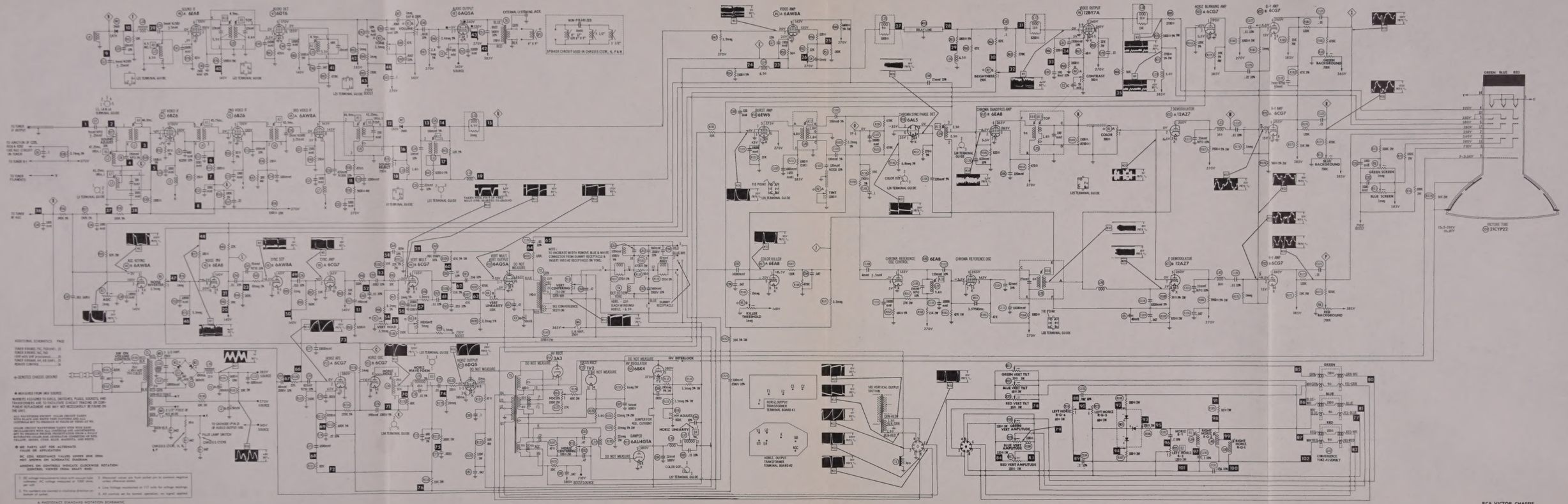


RCA VICTOR CHASSIS
CTC9A, B, F, H, N, P

BLOCK DIAGRAM

ALIGNMENT INSTRUCTIONS

PRE-ALIGNMENT INSTRUCTIONS

The High Voltage lead should be securely taped and kept away from the chassis.
Allow a 20 minute warm-up period for the receiver and test equipment.
Suggested Alignment Tools: GENERAL CEMENT #8606, 8606L, 8282, 9295
WALSCO #2526, 2543, 2544, 2545

VIDEO IF ALIGNMENT

Connect the negative lead of a 6 volt bias supply to point (A). Positive to chassis.
Connect the negative lead of a 15 volt bias supply to point (B). Positive to chassis.
Connect the negative lead of a 7 volt bias supply to point (C). Positive to chassis.
Connect the negative lead of a 7 volt bias supply to pin 2 (grid) of the Horizontal Blanking Amp. Positive to chassis.
Connect a clip lead from point (E) to chassis. Preset Sound Reject (R26) at 75% clockwise rotation. Preset Sound Adjust (R27) at 50% rotation.
Video IF shield must be in place during alignment.

	DUMMY ANTENNA	SIGNAL GENERATOR COUPLING	SIGNAL GENERATOR FREQUENCY	CHANNEL	CONNECT VTVM	ADJUST	REMARKS
1.	Direct	High side to ungrounded tube shield floating over Mixer-Osc. (V202). Low side to chassis.	43.8MC (Unmod)	4	DC probe thru 10K to point (D). Common to chassis. Use negative scale.	A1	Adjust for maximum deflection. Use peak with core nearest printed board end of coil. Maintain VTVM reading of 1.5 volts by adjusting signal generator output.
2.	"	"	42.5MC	"	"	A2	"
3.	"	"	45.75MC	"	"	A3	"
4.	"	"	44.0MC	"	"	A4	"
5.	"	"	"	"	"	Mixer Plate Coil	Adjust for maximum deflection with peak at top end of coil.
6.	"	"	41.25MC	"	"	A5, R26	Adjust A5 and Sound Reject (R26) simultaneously for MINIMUM deflection with slug away from chassis. Reduce bias at point (A) if necessary for sufficient indication.
7.	"	"	47.25MC	"	"	A6, R27	Adjust for MINIMUM deflection with slug away from chassis.
8.	"	"	41.25MC	"	DC probe thru 10K to point (F). Common to chassis.	A7	Increase bias at point (A) to -6 volts. Adjust A7 for MINIMUM deflection with slug away from chassis.

OVERALL VIDEO IF RESPONSE CHECK

Connect bias as under "Video IF Alignment".
Connect a .001mfd capacitor in series with a 180Ω resistor from pin 5 (Plate) of the 2nd Video IF Amp. to chassis with the resistor next to chassis.
Connect a 1000mmf capacitor across the scope leads.
The Video IF shield must be in place during alignment.
Connect the DC probe of the VTVM to point (B). Common to chassis. (Use negative scale).
Use 10MC sweep unless otherwise noted.

	DUMMY ANTENNA	SWEEP GENERATOR COUPLING	SWEEP GENERATOR FREQUENCY	MARKER GENERATOR FREQUENCY	CHANNEL	CONNECT SCOPE	ADJUST	REMARKS
9.	Direct	High side to ungrounded tube shield floating over Mixer-Osc. (V202). Low side to chassis.	45MC	42.17MC 45.75MC	4	Vert. Amp. thru demodulator probe (Fig. 1) to pin 5 (plate) of 1st Video IF. Low side to chassis.		Set sweep output for .1 volt peak to peak on scope. Retouch Mixer Plate Coil and A4 for maximum gain and symmetry of response similar to Fig. 2. Reduce the bias to -4 volts at point (A) if necessary.
10.	"	"	"	41.25MC	"	"		Reduce bias at point (A) to zero. Retouch A7 to place marker in trap notch as in Fig. 2.
11.	"	"	"	47.25MC	"	"		Retouch A6 and R27 to place marker in trap notch as in Fig. 2. Remove capacitor and resistor load from 2nd Video IF. Increase bias at point (A) to -6 volts.
12.	"	"	"	41.65MC 42.17MC 42.75MC 45.0MC 45.75MC	"	Vert. Amp. thru 10K to point (D). Low side to chassis.		Use 3 volts peak to peak on the scope. Retouch A1, A2 and A3 for response similar to Fig. 3 with markers as shown. A1 controls the tilt, A2 affects 42.17MC side of curve and A3 affects the 45.75MC side. Connect a .001mfd capacitor from point (G) to chassis.
13.	"	"	"	41.25MC	"	"		Retouch A5 and R26 to place marker in trap notch if necessary. Remove .001mfd.
14.	Fig. 4	Across VHF antenna terminals thru matching network (Fig. 4).	All VHF Channels separately	42.17MC	All VHF Channels separately	"		Decrease bias at point (B) to -3 volts. SLIGHTLY retouch A1, A2 and A3 to correct for any overall tilt that is approximately the same on all channels. Repeat step 13.

SOUND IF ALIGNMENT

Connect the negative lead of a 10 volt bias supply to point (A). Positive to chassis.
In the following steps the signal level may be reduced by disconnecting the lead from the terminal at point (F) and connecting a 1meg potentiometer from point (F) to chassis. The lead is then connected to the center arm of the control. This arm is then used to control the level of the signal applied to the Sound IF strip. Start alignment with the control turned to maximum signal.

	DUMMY ANTENNA	SIGNAL GENERATOR COUPLING	SIGNAL GENERATOR FREQUENCY	CHANNEL	CONNECT VTVM	ADJUST	REMARKS
15.	.001mfd	High side to point (H). Low side to chassis.	4.5MC (400∿ FM Mod. 15KC swp)	Any non-interfering channel	DC probe thru diode probe (Fig. 5) to pin 1 (grid) of Audio Det. Common to chassis.	A8	Connect a jumper from pin 7 (grid) of Audio Det. to chassis. Adjust for maximum deflection. Set generator for 1 volt on VTVM. Use peak with slug nearest top of coil form.
16.	"	"	"	"	"	A9, A10	Adjust for maximum deflection. Set generator for 1 volt on VTVM. Remove VTVM, diode probe and jumper.
17.	"	"	"	"	USE SCOPE Across voice coil	A11	Starting with slug fully counterclockwise, adjust to a peak. Continue turning clockwise until a second peak is reached and adjust for maximum at this second peak. Decrease signal until detector breaks out of lock as indicated by jagged portions of the sine wave on scope. Retouch A9 for symmetrical breakout similar to Fig. 6.

ALTERNATE SOUND IF ALIGNMENT USING FM GENERATOR

Connect the negative lead of a 10 volt bias supply to point (A). Positive to chassis.

	DUMMY ANTENNA	SIGNAL GENERATOR COUPLING	SIGNAL GENERATOR FREQUENCY	CHANNEL	CONNECT VTVM	ADJUST	REMARKS
15.	.001mfd	High side to point (H). Low side to chassis.	4.5MC (Unmod)	Any non-interfering channel	DC probe thru diode probe (Fig. 5) to pin 1 (grid) of the Audio Det. Common to chassis. Connect scope across speaker voice coil.	A8	Connect a jumper from pin 7 (grid 3) of Audio Det. to chassis. Adjust A8 for maximum deflection on VTVM. Use peak with slug nearest top of coil form.
16.	"	"	"	"	"	A9, A10	Adjust for maximum deflection. Set generator output for 1 volt on VTVM. Peak with maximum core separation. Repeat steps 15 and 16.
17.	Remove the diode probe and jumper. Turn off the signal generator and tune in the strongest signal in the area. Set Volume control for normal volume. Set A11 so that core is flush with the top of coil form. Observe scope and listen to sound. Change bias at point (A) to zero. Adjust A11 clockwise to peak. Continue clockwise to a louder peak, and adjust for maximum output at this second peak. Gradually decrease the signal until sound becomes distorted. Maintain distorted signal and adjust A9 for maximum output.						

4.5MC TRAP ALIGNMENT

	DUMMY ANTENNA	SIGNAL GENERATOR COUPLING	SIGNAL GENERATOR FREQUENCY	CHANNEL	CONNECT VTVM	ADJUST	REMARKS
18.	.001mfd	High side to point (H). Low side to chassis.	4.5MC (400∿ AM)	Any non-interfering channel	USE SCOPE Vert. Amp. thru demodulator probe to pin 6 (plate) of 1st Chroma Bandpass Amp. Low side to chassis.	A12	Adjust for MINIMUM 400∿ indication on scope.

CHROMA BANDPASS ALIGNMENT

Connect the negative lead of a 7 volt bias supply to point (J). Positve to chassis.
Connect a clip lead from point (E) to chassis.
Turn Color control fully clockwise.

	DUMMY ANTENNA	SWEEP GENERATOR COUPLING	SWEEP GENERATOR FREQUENCY	MARKER GENERATOR FREQUENCY	CHANNEL	CONNECT SCOPE	ADJUST	REMARKS
19.	.1mfd	High side to pin 2 (grid) of 1st Chroma Bandpass Amp. Low side to chassis.	3.58MC (3-5MC Swp)	3.08MC 4.08MC	Any non-interfering channel	Vert. Amp. thru demodulator probe (Fig. 7) to pin 7 (grid) of "X" Demodulator. Low side to chassis.	A13, A14	Adjust for response similar to Fig. 8 with equal marker height.
20.	Turn Brightness, Contrast and Noise controls fully counterclockwise. Connect a 330Ω resistor and 4mfd capacitor in series from plate. Pin 6 of 1st Chroma Bandpass Amp. to chassis.							
21.	Direct	High side to ungrounded tube shield floating over Mixer-Osc. (202). Low side to chassis. Connect high side of a separate marker generator to an ungrounded tube shield floating over 1st Chroma Bandpass Amp. Low side to chassis.	4.5MC (10MC Swp)	3.08MC 4.08MC	Any non-interfering channel	Vert. Amp. thru demodulator probe (Fig. 7 to pin 7 (grid) of "X" Demodulator. Low side to chassis.	A15	Remove clip lead between point (E) and chassis. Adjust for response similar to Fig. 9. Peak with core nearest chassis end of coil form.

MISCELLANEOUS ADJUSTMENTS

HORIZONTAL SWEEP CIRCUIT ADJUSTMENTS

Suggested Alignment Tools:
B3, B4....GENERAL CEMENT #8606, 8606L, 8282, 9295
WALSCO #2526, 2543, 2544, 2545

Connect a 0-500MA meter in series with the cathode circuit of the Horizontal Output tube. Connect a .47mfd capacitor across the meter terminals. Connect a 0-1MA meter in series with the cathode circuit of the HV Regulator by removing the test jumper and connecting the meter in its place. Connect the high side of the scope thru a low capacity probe to point (K). Low side to chassis. Connect the DC probe of the VTVM thru a high voltage probe to the High Voltage Rectifier "cup". Common to chassis.
Set the Focus control fully counterclockwise. Set the High Voltage Adjust at two-thirds clockwise rotation. Tune the receiver to a station signal and synchronize the picture. Adjust the Horizontal Waveform slug (B3) for waveform similar to Fig.11 with the round and sharp peaks at equal amplitudes. Keep the picture in sync during this adjustment with the Horizontal Hold.
Adjust the Horizontal Linearity slug (B4) for MINIMUM current indication on the 500MA meter.
Adjust the High Voltage Adjust for 23.5KV on the VTVM. Check the current reading on the meter. It should not exceed .8MA (19 watts).

AGC ADJUSTMENT

Tune in the strongest signal in the area. Connect the high side of a scope to point (E). Low side to chassis. Adjust the AGC control for 10 volts peak to peak on the scope.

NOISE INVERTER ADJUSTMENT

Connect the Vertical amplifier of the scope to point (L). Low side to chassis. Turn the Noise control fully counterclockwise. Turn slowly clockwise while observing the scope, when the tips of the sync pulses appear to be clipped, back off until the clipping just disappears.

COLOR AFC ALIGNMENT

Connect the Vertical amplifier of the scope to point (M). Low side to chassis. Connect the DC probe of the VTVM thru a 470K resistor to pin 2 (plate) of Chroma Sync Phase Detector. Common to chassis. Set the Tint control to the center of its range. Turn the Killer Threshold control fully counterclockwise. Connect a short clip from point (N) to chassis. Adjust A16 for maximum deflection on the VTVM. If the Chroma Reference Oscillator is not running, no reading will be obtained. In which case adjust A18 just enough to start the oscillator and then adjust A16. Adjust A17 for maximum deflection on the VTVM. Make sure the oscillator is running and locked in.
Connect a clip lead from point (O) to chassis. Disconnect the VTVM. Adjust A18 until the Color bars stand still on the screen or drift slowly by.
Move the scope connection to point (P).
Remove the clip lead from point (O). Observe the bar pattern on the scope and retouch A17 if necessary to obtain proper response curve similar to R-Y in Fig. 12 with equal change when rotating the Tint control from one end to the other.
After this adjustment return the Tint control the nominal setting. Move the scope connection to point (R). If necessary, retouch A16 for proper B-Y signal as shown in Fig. 12.
Move scope connection to point (S). Check for proper G-Y signal and repeat adjustment of A17, A16 if necessary.
Remove all clip leads and test equipment. Switch to an unused channel and adjust the Killer Threshold control to the point where color just disappears from the noise pattern on the screen.

PRELIMINARY CONVERGENCE ADJUSTMENTS

Connect the output of a white dot generator to the antenna terminals. Preset all Red, Green and Blue Horizontal and Vertical Convergence controls and coils to the center of their ranges.
Adjust Red, Green and Blue Convergence magnets and the Lateral Magnet to produce a white dot in the center of the screen. Keep the screen in sharp focus during this adjustment. Switch the generator to standby position.

COLOR PURITY ADJUSTMENTS

If necessary, demagetize picture tube and associated components.
Set the red tabs of the Purity Magnet together. Set the Edge Purity Magnets so that the two magnets are in the same relative position one above the other. Loosen the yoke clamp and slide the deflection yoke to the rear as far as possible.
Shunt test points (R) and (S) to chassis thru individual 100K resistors.
Slide Purity Magnet around the neck of the picture tube and at the same time spread the red tabs apart to produce a uniform red screen area at the center of the screen.
Move the Yoke forward and adjust for best overall red screen without neck shadow.
Adjust so that any color impurities occur at the extreme edges of the screen.
Adjust the Screen controls for a white raster and adjust the Edge Purity Magnets for best edge purity. Maximum correction is obtained with the open ends of the magnets 180 degrees apart. Rotate both magnets simultaneously to achieve the desired results.

VERTICAL CONVERGENCE ADJUSTMENTS

Recheck the "Preliminary Convergence Adjustments" for correct setting of the Red, Green and Blue magnets and the Lateral Magnet to produce a white dot in the center of the screen.
Loosen the two screws holding the Convergence board, slide the board to the left and remove. Fasten the board to the top rail of the cabinet with the two screws provided. Place so that the controls face forward.
Switch the dot generator to vertical bars and adjust the Red and Green tilt controls for equal displacement of the Center bar at the top and bottom.
Adjust the Red and Green Amplitude controls until the red and green lines are straight. Gradually reduce the Amplitudes to converge the red, green and blue along the center lines, retouching the Red and Green Tilt controls to keep the lines parallel. The center line should converge to produce a white line from top to bottom or show slight displacement of the Red on one side and the green on the other with all three parallel from top to bottom.
Readjust the Convergence Magnets if necessary to superimpose the three parallel lines to produce a single white line from top to bottom.
Switch the generator to horizontal bars. Referring to the top and bottom bars as a reference, adjust the Blue Vertical Tilt and Amplitude controls for equal downward displacement of the blue horizontal from the extreme top and bottom lines of the raster. Reduce the Blue Vertical Amplitude control to converge all the lines at the center, retouching the Blue Vertical tilt SLIGHTLY, if necessary making all lines white at the center from top to bottom.

HORIZONTAL CONVERGENCE ADJUSTMENTS

Switch the generator to crosshatch pattern. If necessary, retouch convergence magnets to produce good convergence at the center of the screen.
Adjust coil B-1 so that the blue horizontal line at the right center of the screen is a straight line.
Adjust control B-2 for a straight blue line to the left of the raster. Adjust R-G-1 to make the vertical lines at the right side of the raster converge. Adjust R-G-2 to make the horizontal red and green lines at the right side of the screen converge. Readjust B-1 to make the blue lines at the right center fall on the red and green converged lines.
Retouch R-G-1 for convergence of the vertical lines at the right side.
Adjust control R-G-3 to make the vertical lines at the left side converge.
Adjust control R-G-4 to make the red and green horizontal lines at the left side of the screen converge.
Readjust B-2 to make the blue lines at the left center fall on the converged red and green lines.
The picture or pattern should now show proper convergence over the entire screen.

GRAY SCALE ADJUSTMENTS

Set Green and Blue Screen controls two-thirds clockwise from minimum.
Set the Green and Blue Background controls to the center of their ranges.
Set the Red Background control fully counterclockwise and do not change it from this point on. Tune in a station and then turn the Brightness and Contrast controls fully counterclockwise. Use a program which displays the full range of contrast conditions from high lights to low lights.
Advance the Brightness control to obtain a picture of normal brightness. The control will usually fall approximately two-thirds clockwise. DO NOT overload.
Adjust the Blue and Green Background controls to produce white in the highlight areas of the picture.
Reduce the Brightness to produce a low level brightness picture and observe the lowlight areas (dark objects) of the picture. Some color will prevail in the lowlight areas, as indicated below.

1. Yellow in the lowlight areas. Blue Screen must be turned clockwise.
2. Magenta in the lowlight areas. Green Screen must be turned clockwise.
3. Red in the lowlight areas. Blue and Green Screens must be turned clockwise.
4. Green in the lowlight areas. Green screen must be turned counterclockwise.
5. Blue in the lowlight areas. Blue Screen must be turned counterclockwise.
6. Cyan in the lowlight areas. Blue and Green Screens must be turned counterclockwise.

Depending upon which of the above conditions prevail, turn the appropriate control in the indicated direction until a gray picture is obtained, then SLIGHTLY beyond in the same direction.
Advance the Brightness control to produce a well lit picture. Adjust the Blue and Green Background controls for white in the highlight areas of the picture. DO NOT ADJUST THE RED BACKGROUND CONTROL. Return the Brightness control to the lowlight area and retouch the proper Screen controls for gray in the lowlight areas.
Check for proper tracking at all light levels and retouch as necessary being sure not to change Red Background control setting.

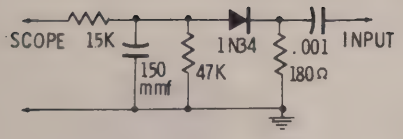


FIG. 1

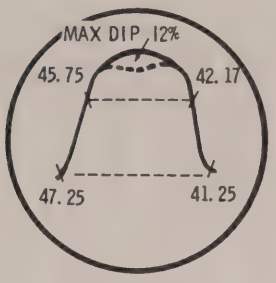


FIG. 2

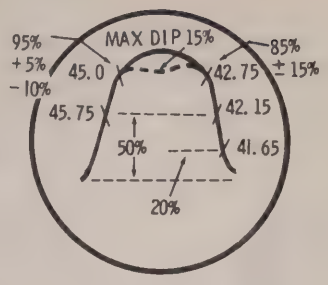


FIG. 3

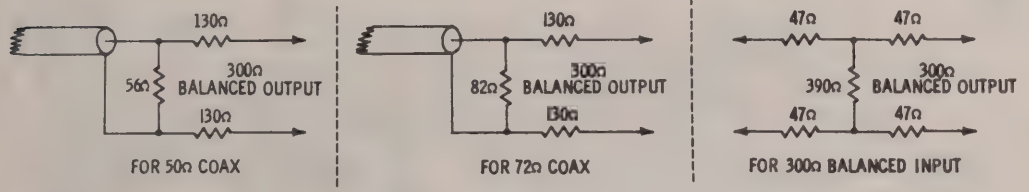


FIG. 4

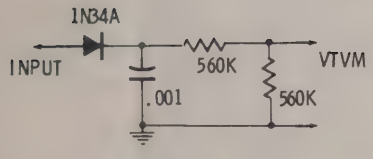


FIG. 5

FIG. 6

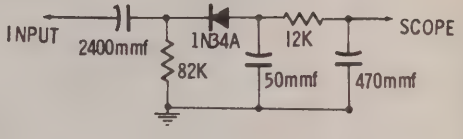


FIG. 7

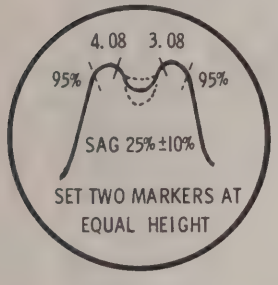


FIG. 8

FIG. 9

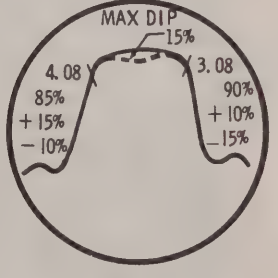


FIG. 10

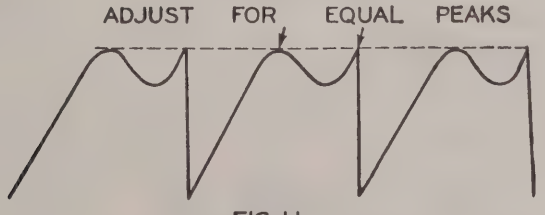


FIG. 11

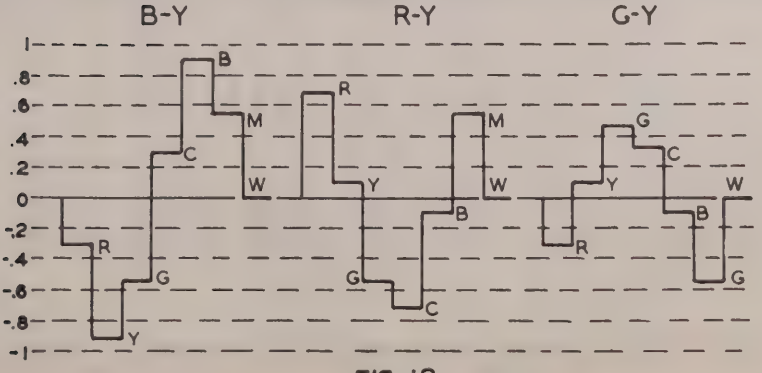
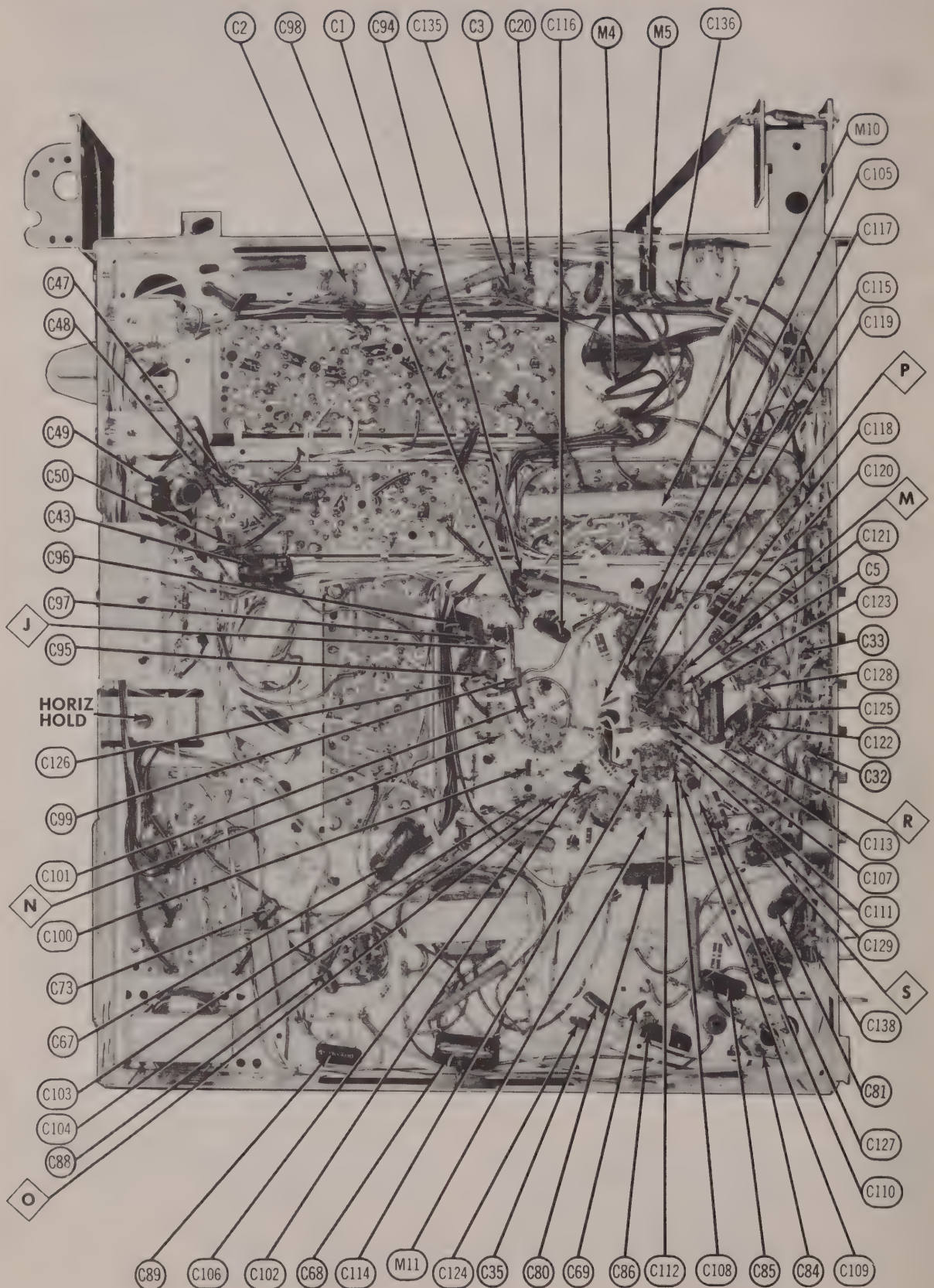


FIG. 12



CHASSIS BOTTOM VIEW-CAPACITOR AND ALIGNMENT IDENTIFICATION

PARTS LIST AND DESCRIPTIONS

TUBES

◆ CBS ◆ GENERAL ELECTRIC ◆ RAYTHEON ◆ SYLVANIA ◆					
ITEM No.	USE	TYPE	ITEM No.	USE	TYPE
V1	1st Video IF Amp.	6BZ6	V15	Focus Rectifier	1V2
V2	2nd Video IF Amp.	6BZ6	V16	HV Regulator	6BK4
V3	3rd Video IF Amp. Sync Sep.	6AW8A	V17	Chroma Bandpass Amp. - Color Killer	6EA8
V4	Video Amp. -AGC Keying	6AW8A	V18	Burst Amp.	6EW6
V5	Video Output	12BY7A	V19	Chroma Sync Phase Det.	6AL5
V6	Sound IF Amp. -Noise Inv.	6EA8	V20	Chroma Ref. Osc. Control- Chroma Ref. Osc.	6EA8
V7	Audio Det.	6DT6	V21	"X" Demodulator - "Z" Demodulator	12AZ7
V8	Audio Output	6AQ5A	V22	R-Y Amp. - B-Y Amp.	6CG7
V9	Sync Amp. -Vert. Mult.	6CG7	V23	Horiz. Blanking Amp. - G-Y Amp.	6CG7
V10	Vert. Mult. -Vert. Output	6AQ5A			
V11	Horiz. AFC-Horiz. Osc.	6CG7			
V12	Horiz. Output	6DQ5			
V13	Damper	6AU4GTA			
V14	HV Rectifier	3A3			

PICTURE TUBE

ITEM No.	REPLACEMENT DATA					NOTES
	RCA Victor PART No.	GENERAL ELECTRIC PART No.	RCA PART No.	RAYTHEON PART No.	SYLVANIA PART No.	
V24	21CYP22		21CYP22			

ELECTROLYTIC CAPACITORS

ITEM No.	RATING		REPLACEMENT DATA						
	CAP.	VOLT.	RCA Victor PART No.	AEROVOX PART No.	CORNELL-DUBILIER PART No.	MALLORY PART No.	PYRAMID PART No.	SPRAGUE PART No.	NOTES
C1	160	250	106364	AFH1-31-75	XA0315	FP131	TMS-34	TVL-1540	
C2A	▲160	250	106363	AFHS3-178-60	D0360	FP341.6		TVLS-3711.2*	
B	■50	450			BR6045				
C	▲50	50							
C3A	▲80	450	105219	AFH3-182-80	B0489	FP342.8	TMD-93	TVLS-3723.7*	
B	■50	350			BR10035		TD-100-200		
C	▲100	200							
C4	2	350	78920	PRS1705	BR245	TC60	TD-2-450	TVA-1701	
C5	40	25	105758	PRS1470	BR4015	TC48	TD-40-150	TVA-1413	

* Not normally in distributor's stock. Available thru distributor on order to manufacturer.

FIXED CAPACITORS

Capacity values given in the rating column are in mfd. for Paper Capacitors, and in mmfd. for Mica and Ceramic Capacitors.

ITEM No.	RATING			REPLACEMENT DATA						NOTES
	CAP.	VOLT	TOL	RCA Victor PART No.	AEROVOX PART No.	CENTRALAB PART No.	CORNELL-DUBILIER PART No.	MALLORY PART No.	SPRAGUE PART No.	
C6	.1	200			P288N-1	DF-104	CUB2P1	GEM-201	2TM-P1	
C7	9		NPO ±.25mmf	105298			C10V9C			
C8	150		NPO 5%	105299		DTZ-150		CNO-315	10TCC-T15	
C9	680		N2200 10%	102237						
C10	1000			77252	BPD-001	DD-102	BYA10D1	B-210	5HK-D10	
C11	1000			77252	BPD-001	DD-102	BYA10D1	B-210	5HK-D10	
C12	1000			77252	BPD-001	DD-102	BYA10D1	B-210	5HK-D10	
C13	330		10%	101725	DI-330	DD-331	L10T33	JL-333	10TS-T33	
C14	1000			77252	BPD-001	DD-102	BYA10D1	B-210	5HK-D10	
C15	1000			77252	BPD-001	DD-102	BYA10D1	B-210	5HK-D10	
C16	2		N3300 ±.25 mmf	106390						
C17	1.5		N3300 ±.25 mmf	103411						
C18	470		N1500 10%	105302						
C19	1000			77252	BPD-001	DD-102	BYA10D1	B-210	5HK-D10	
C20	1000				BPD-001	DD-102	BYA10D1	B-210	5HK-D10	
C21	1500			73748	BPD-0015	DD-152	BYA10D15	B-215	5HK-D15	
C22	1000			77252	BPD-001	DD-102	BYA10D1	B-210	5HK-D10	
C23	10		10%	105303	DI-10	DD-100	L10Q1	CNO-410	10TS-Q10	
C24	10		10%	105303	DI-10	DD-100	L10Q1	CNO-410	10TS-Q10	
C25	22		10%	102793	DI-22	DD-220	L10Q22	CNO-422	10TS-Q22	
C26	100		5%	105304		DTZ-100	C10T1C	CNO-100	10TCC-T10	
C27	1000		10%	102234A	DI-1000	DD-102	PM6D1	JL-210	10TS-D10	
C28	.1	200			P288N-1	DF-104	CUB2P1	GEM-201	2TM-P1	
C29	.22	200			P288N-22		CUB2P22	GEM-2022	2TM-P22	
C30	390		10%	105310	DI-390	DD-391	L10T39	MCB243	10TS-T39	
C31	1500		10%	104890	DI-1500		PM6D15	JL-215	10TS-D15	
C32	1000			77252	BPD-001	DD-102	BYA10D1	B-210	5HK-D10	
C33	1000			77252	BPD-001	DD-102	BYA10D1	B-210	5HK-D10	
C34	1000			77252	BPD-001	DD-102	BYA10D1	B-210	5HK-D10	
C35	.001	1600			P1684CM-001	DD30-1000	CUB16D1	GEM-1621	16TM-D1	
C36	1000			77252	BPD-001	DD-102	BYA10D1	B-210	5HK-D10	
C37	.22	200			P288N-22		CUB2P22	GEM-2022	2TM-P22	
C38	10000			73960	BPD-01	DD-103	BYA10S1	B-110	5HK-S10	
C39	5		N1500 ±.5mmf	106384						
C40	1500		10%	104890	DI-1500		PM6D15	JL-215	10TS-D15	
C41	10000			73960	BPD-01	DD-103	BYA10S1	B-110	5HK-S10	
C42	560		10%	105248	DI-560	DD-561	1R5T56	JL-356	10TS-T56	
C43	.1	600			P688N-1	DF-104	CUB6P1	GEM-601	6TM-P1	
C44	10000			73960	BPD-01	DD-103	BYA10S1	B-110	5HK-S10	
C45	10000			73960	BPD-01	DD-103	BYA10S1	B-110	5HK-S10	
C46	.047	200			P288N-047	DF-503	CUB2S47	GEM-4147	2TM-S47	
C47	.0068	400			P488N-0068	D6-682	CUB6D68	GEM-6268	6TM-D68	
C48	.0018	600	10%				PM6D2	GEM-1622	6TM-D2	
C49	.0047	600	10%		V84C6D47-10%		PM6D47	GTM-6247	6TM-D47	
C50	1000		10%	102234A	DI-1000	DD-102	PM6D1	JL-210	10TS-D10	

PARTS LIST AND DESCRIPTIONS (Continued)

CAPACITORS (cont)

ITEM No	RATING CAP.	VOLT	TOL	REPLACEMENT DATA RCA Victor PART No.	ALLOYOX PART No.	CENTRALAB PART No.	CORNELL DUBILIER PART No.	MALLORY PART No.	SPRAGUE PART No.	NOTES
C81	.0027	1600	10%					GEM-16225		
C83	10000			73980	BPD-01	DD-103	BYA10S1	B-110	5HK-S10	
C83	10000			73980	BPD-01	DD-103	BYA10S1	B-110	5HK-S10	
C84	.01	400			V84C4S8-10%		PM4S3	GTM-411	4TM-P1	
C84	33			107297	N750-DL 33	DTN-33	C10Q33U	CN7-433	10TCU-Q33	
C84	.033	400	10%		V84C4S33-10%		PM4S33	GTM-4133	4TM-S33	
C87	180			105310	DK-180	DD-181	DT-3	B-310	5GA-T39	
C88	.01	400	10%		V84C4S1-10%		PM4S1	GTM-411	4TM-S1	
C89	.0082	400	10%		D564C4S-0082			GEM-16282	6TM-D8	
C90	10000	1000		100382	BPD-DL	DD-103	BYA10S1	B-110	5HK-S10	
C91	.066	900	10%		D684C4M-067			GTM-6156		
C91	.01	600	10%		V84C6S1-10%		PM6S1	GTM-611	6TM-S1	
C93	.033	400	10%		V84C4S33-10%		PM4S33	GTM-4133	4TM-S33	
C94	[illegible]	400	10%				1DR5D66	GTM-4256	6TM-D6	
C96	.001	3000	10%	105330						
C96	.12	600	10%							
C97	.47	200			P388N-47		CUB2P47	GEM-2047	2TM-P47	
C98	.47	200			P388N-47		CUB2P47	GEM-2047	2TM-P47	
C99	03	3000	10%	106373				2DY-468		
C70	82		N750 10%	105832		TCN-82	C10Q82U	CN7-482	10TCU-Q82	
C71	1000			102334A	BPD-001	DD-102	BYA10D1	B-210	5HK-D10	
C73	680		5%	107385	1468-00068J		1R5T68		MB-368	
C73	.0033	600			P688N-0033	D6-333	CUB6D33	GTM-6233	6TM-D33	
C74	.27	400	10%		V84C4P25-10%		PM4P25	GTM-4127	4TM-P25	
C75	.0033	600			P688N-0033	D6-333	CUB6D33	GEM-6233	6TM-D33	
C76	330	1000	5%	107286	1468W-00339-5%		MCB343			
C77	10000			73980	BPD-01	DD-103	BYA10S1	B-110	[illegible]	
C78	.01	600	5%		V84C6S1-5%					
C79	.01	600			P688N-01	D6-103	CUB6S1	GEM-611	6TM-S1	
C80	.1	600			P688N-1	DF-104	CUB6P1	GEM-601	6TM-P1	
C81	.047	600			P688N-047	DF-503	CUB6S47	GEM-6147	6TM-S47	
C82	.47	200			P388N-47		CUB2P47	GEM-2047	2TM-P47	
C83	.47	200			P388N-47		CUB2P47	GEM-2047	2TM-P47	
C84	23	1900		106333	DK-23	DD-220	1JQ922	CNC-422	5GA-Q32	
C85	.15	300	10%		V84C2P15-10%		PM2P15	GTM-2015	2TM-P15	
C86	.1	600	10%		V84C6P1-10%		PM6P1	GTM-601	6TM-P1	
C87	50	8000		106370	SVD-80-56	DD80-S60		6DY-456	80GA-Q56	
C88	.0033	600			P688N-0033	D6-332	CUB6D33	GEM-6233	6TM-D33	
C90	.047	600			P688N-047	DF-503	CUB6S47	GEM-6147	6TM-S47	
C90	47	4000		106306	SVD-80-47	DD80-470	HVB50Q47	6DY-447	80GA-Q47	
C91	680	3000	10%	106307						
C92	680	3000	10%	106307						
C93	100	3000	5%	106306						
C94	.047	200			P388N-047	DF-503	CUB2S47	[illegible]	[illegible]	
C95	220			77835	DK-220	DD-221	L10T22	B-322	5GA-T22	
C96	.047	200			P288N-047	DF-503	CUB2S47	GEM-4147	2TM-S47	
C97	10000			73980	BPD-DL	DD-103	BYA10S1	B-110	5HK-S10	
C98	27		10%	100352	NPO-SI 27	DD-270	L10Q27	CNO-427	10TS-Q27	
C99	120			102309		DD-121	L10T12	UC-5312	5GA-T12	
C100	1000			77315	BPD-001	DD-102	BYA10D1	B-210	[illegible]	①
C101	10000			73980	BPD-01	DD-103	BYA10D1	B-110	[illegible]	
C102	330		5%	107285	1468-00033J		5R5T33		MB-333	
C103	130		5%	106343						
C104	330		5%	107396	1468-00033J		5R5T33		MB-333	
C105	130		5%	105194		DTZ-130	2ER5T13	CNO-312	10TCC-T12	
C106	1		20%		P288N-1	DF-104	CUB1P1	GEM-201	2TM-P1	
C107	10000			73980	BPD-01	DD-103	BYA10S1	B-110	5HK-S10	
C108	4		e. 5mmf	106347			1DV4C1		4TM-S4	
C109	15		N750 10%	104309	NPO-DK 15	DTZ-15	C10V15C	CNO-415	10TCC-Q15	
C110	10000			73980	BPD-01	DD-103	BYA10S1	B-110	5HK-S10	
C111	10000			73980	BPD-01	DD-103	BYA10S1	B-110	5HK-S10	
C113	220		10%	106349	DK-220	DD-221	L10T22	JL-322	10TS-T22	
C113	10000			73980	BPD-01	DD-103	BYA10S1	B-110	5HK-S10	
C114	82		10%	106346	DK-82	DD-820	L10Q82	CNO-482	10TS-Q82	
C115	33		N750 10%	103348	NPO-DK 33	DTZ-33	C10Q33C	CNO-433	10TCC-Q33	
C116	.047	600			P488N-047	DF-503	CUB4S47	GEM-4147	4TM-S47	
C117	33		N750 10%	103348	NPO-1233	DTZ-33	C10Q33C	CNO-433	10TCC-Q33	
C118	1000		5%	104336	1468-001J		1R5D1	MCE255	MB-21	
C119	.047	200			P388N-047	DF-503	CUB2S47	GEM-4147	2TM-S47	
C120	.01	400	10%		V84C4S1-10%		PM4S1	GTM-411	4TM-S1	
C121	.15	600			P488N-15		CUB4P15	GEM-4015	4TM-P15	
C122	.01	400	10%		V84C4S1-10%		PM4S1	GTM-411	4TM-S1	
C123	.15	600			P488N-15		CUB4P15	GEM-4015	4TM-P15	
C124	100	3000	10%	105418				2HV-310		
C125	.22	400	10%		V84C4P22-10%		PM4P22	GTM-4023	4TM-P22	
C126	82			102084	DK-820	DD-821	1R7T82	JL-382	10TS-T82	
C127	.01	400	10%		V84C4S1-10%		PM4S1	GTM-411	4TM-S1	
C128	Y		N750 .simmf	107387			C10V7C			
C129	.15	600			P488N-15		CUB4P15	GEM-4015	4TM-P15	
C130	.1	300	10%		V84C2P1-10%		PM2P1	GTM-201	2TM-P1	
C131	.056	300	10%		P688CM-057			GTM-2056	2WF-S56	
C132	.1	300	10%		V84C2P1-10%		PM2P1	GTM-201	2TM-P1	
C133	.082	300	10%						2WF-S82	
C134	.1	300	10%		V84C2P1-10%		PM2P1	GTM-301	2TM-P1	
C135	1000			77352	BPD-001	DD-102	BYA10D1	B-210	5HK-D10	
C136	10000			73980	BPD-01	DD-103	BYA10S1	B-110	5HK-S10	
C137	10000			73980	BPD-01	DD-103	BYA10S1	B-110	5HK-S10	
C138	.047	600			P688N-047	DF-503	CUB6S47	GEM-6147	6TM-S47	
C139	.01	400	10%		V84C4S1-10%		PM4S1	GTM-411	4TM-S1	

① Some versions may use 470mmf in this application (Part #103330).

CONTROLS

ITEM No.	RATING RESISTANCE	WATTS	REPLACEMENT DATA RCA Victor PART No.	CENTRALAB PART No.	CLAROSTAT PART No.	IRC PART No.	MALLORY PART No.	INSTALLATION NOTES
R1A	500Ω		107371					Color ①
B	Shaft							Volume, Tap ② 200K ①
C	Switch							Push-Pull Off-On
R2A	1200Ω		107478	F1-7		★ GU-1122	★ USE807	Tint ②
B	250K			R3-34				Brightness ③
R3 A	2.5meg		105300					Tone ③
B	5meg							Height ③
R4A	500Ω		107389					Contrast ③
B	100K							Vert. Lin. ④
R5 A	2.5meg		107300					Vert. Hold ⑤
B	1meg							Killer Threshold ⑤

CONTROLS (cont)

ITEM No	RATING RESIST ANCE	WATTS	REPLACEMENT DATA RCA Victor PART No.	CENTRALAB PART No.	CLAROSTAT PART No.	IRC PART No.	MALLORY PART No.	INSTALLATION NOTES
R6A	2.5meg		105304	AB-23	B47-2.5meg-S	B11-250	SU-586	Noise Inverter
B	Shaft			AK-1	Not Req.	TM4	Not Req.	
R7A	1meg		105321	BK-69	B47-1meg-S	B11-137	TA16L	AGC
B	Shaft			Not Req.	Not Req.	TM4	Not Req.	
R8A	700K		107301	AB-56	A47-750K-S	B11-136	PTA764L	Red Background
B	Shaft			AK-1	FK2-1/4	TM4	Not Req.	
R9A	1meg		105305	BK-69	B47-1meg-S	B11-137	SU-54	Green Screen
B	Shaft			Not Req.	Not Req.	TM4	Not Req.	
R10A	700K		107301	AB-56	A47-750K-S	B11-136	PTA764L	Green Background
B	Shaft			AK-1	FK2-1/4	TM4	Not Req.	
R11A	1meg		105305	BK-69	B47-1meg-S	B11-137	SU-54	Blue Screen
B	Shaft			Not Req.	Not Req.	TM4	Not Req.	
R12A	700K		107301	AB-56	A47-750K-S	B11-136	PTA764L	Blue Background
B	Shaft			AK-1	FK2-1/4	TM4	Not Req.	
R13 A	15Ω	2(WW)	105307	WN-150	A58-15		B16L	Vert. Centering
B	Shaft			Not Req.	FK2-1/4		Not Req.	
R14	100K	2(WW)	105208A	WW-104			M100MDFK	Focus
R15	100Ω	2(WW)	105309					Horiz. Centering
R16A	500K		106210	BK-89	B47-500K-S	B11-133	SU-50	HV Adjust
B	Shaft			Not Req.	Not Req.	TM4	Not Req.	
R17	1200Ω	1(WW)	105320					Vert. Red Amp.
R18	1200Ω	1(WW)	105320					Vert. Green Amp.
R19	1200Ω	1(WW)	105320					Vert. Blue Amp.
R20	30Ω	1(WW)	105321					Vert. Red Tilt
R21	30Ω	1(WW)	105321					Vert. Green Tilt
R22	60Ω	1(WW)	105059				PFL-60A	Vert. Blue Tilt
R23	60Ω	1(WW)	105059				PFL-60A	Left Horiz. R-G-3
R24	60Ω	1(WW)	105059				PFL-60A	Left Horiz. R-G-4
R25	120Ω	1(WW)	105320					Left Horiz. B-3
R26	750Ω		105397					Sound Reject
R27	10K	1/4	106388					Sound Adjust

■ "Concentrikit" Equivalent: K-15 With Base Elements & Shafts: B17-206, P17-024 (Panel)
B11-150, R1-111 (Rear)

★ "STA-LOC" Equivalent: FB15A, RU2541, OF812, IS1437.
① Ch. CT29F, H use Color, Volume & Switch (Part #107412).
Ch. CT29N, P use Color control (Part #107582). Volume with Switch (Part #10758).
② Ch. CT29F, H use Tint-Brightness (Part #107412). Ch. CT29N, P use Tint-Brightness (Part #107580).
③ Ch. CT29F, H, N, P use Tone-Height (Part #107412).
④ Ch. CT29F, H, N, P use Contrast-Vert. Lin. (Part #107414).
⑤ Ch. CT29F, H, N, P use Vert. Hold-Killer Threshold (Part #107415).

RESISTORS

All wattages 1/2 watt, or less, unless otherwise listed.

ITEM No.	RATING	REMARKS
R28	2.7meg 5%	
R29	3300Ω 5%	
R30	100Ω	
R31	150Ω	
R32	47Ω 5%	
R33	100Ω	
R34	820Ω	
R35	82Ω 5%	
R36	3300Ω 10W	
R37	18K 4W	[illegible]
R38	47Ω	[illegible]
R39	5600Ω 4W	
R40	150Ω	
R41	10K	
R42	8200Ω 5%	
R43	13K 5%	
R44	180K	
R45	10meg 5%	
R46	39K	
R47	3.9meg	
R48	6800Ω 5% 7W	#105226
R49	22K	
R50	220Ω	
R51	150K	
R52	22K	
R53	56Ω	
R54	1500Ω 5%	
R55	82K 2W	
R56	390K 5%	
R57	330K 5%	
R58	330K 5%	
R59	100K 5%	
R60	47K	
R61	1800Ω 5%	
R62	82K	
R63	270K	
R64	56K	
R65	22K 2W	
R66	220Ω	
R67	68Ω	
R68	1000Ω	
R69	2700Ω	
R70	1800Ω 5% 3W	#107323
R71	2700Ω 5% 7W	#105323
R72	100K 2W	
R73	100K 2W	
R74	100K 2W	
R75	3.3meg	
R76	1meg	
R77	100Ω	
R78	3300Ω 3W	#103877
R79	82Ω	
R80	3300Ω 3W	#103877
R81	470Ω	
R82	470K	
R83	1meg	
R84	1meg	

ITEM No.	RATING	REMARKS
R85	150K	
R86	2.4meg 5%	
R87	2.4meg 5%	
R88	47K	
R89	1meg	
R90	560K	
R91	33K	
R92	10K 2W	
R93	6200Ω	
R94	100K	
R95	10K	
R96	8.2meg 5%	
R97	1meg 5%	
R98	1.8meg	
R99	1.5meg	
R100	33K	
R101	22K 5% 2W	
R102	470K	
R103	2.2meg 5%	
R104	47K 5% 1W	
R105	12nK	
R106	330K	
R107	47K	
R108	15K 5%	
R109	22K	
R110	330K	
R111	82K	
R112	680K 5%	
R113	6200Ω	
R114	270K 5%	
R115	1meg	
R116	68K	
R117	100K 1W	
R118	33K 2W	
R119	10meg	
R120	100Ω	
R121	47Ω	
R122	120K 1W	
R123	18K 4W	#106365
R124	56K 2W	
R125	3.6Ω	#106386
R126	68K 2W	
R127	27K	
R128	22meg 5% 2W	
R129	22meg 5% 2W	
R130	22meg 2W	
R131	1meg 2W	
R132	100meg 5% 1W	
R133	1.5meg 5% 1W	
R134	1.5meg 5% 1W	
R135	10K	
R136	47000 2W	
R137	2700 5%	
R138	50Ω	#107636
R139	2700Ω 5%	
R140	2700Ω 7W	#105223
R141	2.2meg	

ITEM No.	RATING	REMARKS
R142	33K 5% 1W	
R143	120K 5%	
R144	470Ω	
R145	820Ω	
R146	10meg	
R147	150K	
R148	470K	
R149	1500Ω	(4700Ω) *
R150	33Ω	
R151	1000Ω	(33K) *
R152	27K	
R153	2.2meg 5%	
R154	470K	
R155	470K	
R156	5.6meg 5%	
R157	2700 5%	
R158	33K	
R159	1500Ω 5%	
R160	15K 2W	
R161	27K 2W	
R162	6800Ω 5%	
R163	47K 1W	
R164	1000Ω	
R165	47K	
R166	3900Ω 5% 1W	
R167	3900Ω 5% 1W	
R168	39Ω 5% 1W	
R169	820Ω 1W	
R170	1meg	
R171	15K 3W	#105224
R172	120K	
R173	470K	
R174	1meg	
R175	15K 3W	#105224
R176	130K	
R177	470K	
R178	560Ω 5% 2W	
R179	39K 5% 4W	#105753
R180	3300Ω 1W	
R181	1meg	
R182	47K 5%	
R183	15K 3W	
R184	130K	
R185	470K	
R186	100Ω 1W	
R187	100Ω 1W	
R188	100Ω 1W	
R189	82Ω 1W	
R190	100Ω	
R191	820K	
R192	820K	
R193	.49Ω HOT (78Ω COLD)	#107291
R194	1600Ω 10W	
R195	1600Ω 10W	
R196	10K 1W	
R197	47Ω	

* Alternate value.

COILS (RF-IF)

ITEM No.	USE	REPLACEMENT DATA RCA Victor PART No.	Gramer PART No.	Meissner PART No.	Merit PART No.	Miller PART No.	Ram PART No.	NOTES
L1	1st Video IF	106385						
L2	47.25MC Trap	105306						
L3	41.25MC Trap	106391						
L4	2nd Video IF	106386						
L5	Fil. Choke							
L6	3rd Video IF	106387						
L7	Fil. Choke							
L8	RF Choke	100441	19-2864	19-2864	BC-586	4622		12uh
L9A	4th Video IF	105394						
B	41.25MC Trap							
L10	RF Choke	105308						13uh
L11	4.5MC Trap	105295						
L12	RF Choke	78486						1.8uh
L13	Series Peaking Coil	102301	19-4060 *	19-4060 *	TV-193 *	6110 *		82uh ①
L14	Shunt Peaking Coil	104904	19-3180	19-3180	TV-184	6180	VP-5	180uh
L15	Series Peaking Coil	102196	19-3180 ▲	19-3180 ▲	TV-184 ▲	6180 ▲	VP-5 ▲	180uh ②
L16	Shunt Peaking Coil	104904	19-3180	19-3180	TV-184	6180	VP-5	180uh
L17	Series Peaking Coil	100311	19-3250 ■	19-3250 ■	TV-185 ■	6181 ■	VP-6 ■	250uh ③
L18	Series Peaking Coil	105295	19-3250 ●	19-3250 ▲	TV-185 ▲	6181 ▲	VP-6 ▲	250uh ④
L19	Shunt Peaking Coil	106377	19-3060	19-3060	TV-193	6110		82uh
L20	RF Choke	100441	19-2864	19-2864	BC-586	4622		12uh
L21	1st Sound IF	106381						
L22	2nd Sound IF	106382						
L23	Quadrature Coil	106383						
L24	1st Chroma Grid Coil	107290						Tap ⑤ 2.5Ω
L25	1st Chroma Bandpass Trans.	105213						
L26	Burst Amp. Trans.	105214						Sec. tap ⑥ 1.8Ω
L27	Chroma Ref. Osc. Control Plate Coil	105216						
L28	Chroma Ref. Osc.	107289	17-6013	17-6013		6023		620uh
L29	RF Choke	107298	19-1000	19-1000	BC-581	6502		1.1uh
L30	Series Peaking Coil	102348	19-3660	19-3660	TV-205	6146		620uh
L31	Series Peaking Coil	102349	19-3660	19-3660	TV-205	6146		620uh
L32	RF Choke	100441	19-2864	19-2864	BC-586	4622		12uh
L33	RF Choke	100441	19-2864	19-2864	BC-586	4622		12uh

* Parallel with 1meg resistor. ■ Parallel with 8200Ω resistor. ① Wound on 1meg resistor. ② Wound on 8200Ω resistor.
▲ Parallel with 1800Ω resistor. ● Parallel with 15K resistor. ③ Wound on 1800Ω resistor. ④ Wound on 2.2K resistor.

TRANSFORMER (HORIZ. OSC.)

ITEM No.	DC RES. PRI.	DC RES. SEC.	REPLACEMENT DATA RCA Victor PART No.	Halldorson PART No.	Merit PART No.	Miller PART No.	Ram PART No.	Thordarson PART No.	NOTES
L34	81Ω		105197	HS-7	TV-155			HS-7	Horiz. Osc. Tap ⑦ 29Ω
L35	45Ω		100300						Horiz. Waveform

FILTER CHOKE

ITEM No	RATINGS CURRENT (Measured)	DC RES	INDUCTANCE @ CURRENT 1000 ~/s	REPLACEMENT DATA RCA Victor PART No.	Halldorson PART No.	Merit PART No.	Miller PART No.	Ram PART No.	Stancor PART No.	Thordarson PART No.	Triad PART No.
L36	.450A	17Ω	.7 Hy.	105195							C-40X

COILS (SWEEP CIRCUITS)

ITEM No	USE	REPLACEMENT DATA RCA Victor PART No.	Halldorson PART No.	Merit PART No.	Miller PART No.	Ram PART No.	Rogers PART No.	Stancor PART No.	Thordarson PART No.	Triad PART No.
L37	Horiz. Linearity	105196								
L38	Right Horiz. Red-Grees 1	105065								
L39	Horiz. Blue 1	105065								
L40	Right Horiz. Red-Green 2	105066								
L41	Convergence Yoke Assy.									
A	Green Coil	106319								
B	Blue Coil	106318								
C	Red Coil	106319								

TRANSFORMER (POWER)

ITEM No	RATING PRI	SEC. 1	SEC. 2	REPLACEMENT DATA RCA Victor PART No	Halldorson PART No.	Merit PART No.	Ram PART No.	Stancor PART No.	Thordarson PART No.	Triad PART No.
T1	117V ⑧ 3A	180V ⑨ 1.7A (AC)	6.3V ⑩ [illegible]	106338						
	SEC. 3	SEC. 4	SEC. 5							
	6.3V ⑩ 13A									

TRANSFORMERS (SWEEP CIRCUITS)

ITEM No.	USE	REPLACEMENT DATA RCA Victor PART No.	Halldorson PART No.	Merit PART No.	Ram PART No.	Rogers PART No.	Stancor PART No.	Thordarson PART No.	Triad PART No.
T2	Vert. Output	106360							
T3	Vert. Convergence	106361							
T4A	Yoke-Horiz.(12MH) Vert. (35MH)	106305							
T5	Horiz. Output	106359							

RCA VICTOR CHASSIS CTC9A, B, F, H, N, P

FOLDER 1

PARTS LIST AND DESCRIPTIONS (Continued)

TRANSFORMER (AUDIO OUTPUT)

ITEM No.	IMPEDANCE		REPLACEMENT DATA							NOTES
			RCA Victor PART No.	Halldorson PART No.	Merit PART No.	Ram PART No.	Stancor PART No.	Thordarson PART No.	Triad PART No.	
	PRI.	SEC.								
T6	7600Ω	3-4Ω	100037	26S48	A-3020	AU-604	A-3849	26S48	S-9Z	

SPEAKER

ITEM No.	TYPE			REPLACEMENT DATA		NOTES
				RCA Victor PART No.	QUAM PART No.	
	SIZE	FIELD	V. C. IMP.			
SP1	6" x 9"	PM	3-4Ω	107304 ①	69A3	
	8"	PM		107475 ②		
	4" x 6"	PM		107476 ③		
	4" x 6"	PM		107477 ④		
	3 1/2"	PM	8-10Ω	102119 ⑤	3A15TZ9	

① Models 210CK855, 6, 7, & U, 210CK885, 6, 9 & U, 210CK905, 6, 7, & U, 210CK940, 6, & U.
② Models 210CT822U, 210CK920, 4, & U, 210CK935, 6, & U.
③ Models 210CTR845, 7
④ Models 210CT835, 6, 7, & U.
⑤ Models 210CK855, 6, 9, & U, 210CK905, 6, 7, & U, 210CK920, 4, & U, 210CK935, 6, & U, 210CKR940, 6, & U.

RECTIFIERS

ITEM No.	RATING	REPLACEMENT DATA					NOTES
	CURRENT (Measured)	RCA Victor PART No.	FEDERAL PART No.	INTERNATIONAL PART No.	SARKES TARZIAN PART No.	SYLVANIA PART No.	
M1	.450A	106379 ①	HA505 ①	SD-500 ①	F6 ①	SR500 ①	① Silicon Type.
M2	.450A	106379 ①	HA505 ①	SD-500 ①	F6 ①	SR500 ①	② Selenium Type.
M3		105064 ②					

FUSES

ITEM No.	TYPE	RATING	REPLACEMENT DATA					
			RCA Victor PART No.		LITTELFUSE PART No.		BUSS PART No.	
			FUSE	HOLDER	FUSE	HOLDER	FUSE	HOLDER
M4	$2\frac{1}{2}$" #21 Wire		102792					
M5	C	$3\frac{1}{2}$A 250V	106357	106356	33203.5 (C $3\frac{1}{2}$A-250V)	346007	C $3\frac{1}{2}$	HC $2\frac{1}{4}$ to $3\frac{1}{2}$
M6	3AG	3/4A 250V P/T	105252		318.750 (3/4A-250V 3AG-P/T)		GJV 3/4	

CRYSTAL DIODES

ITEM No.	ORIG. TYPE	REPLACEMENT DATA				NOTES
		RCA Victor PART No.	CBS PART No.	RAYTHEON PART No.	SYLVANIA PART No.	
M7	1N60	76675B	1N60	1N60	1N295	Video Det. (Pigtail)
M8	1N60	76675B	1N60	1N60	1N295	Sound Det. (Pigtail)

MISCELLANEOUS

ITEM No.	PART NAME	RCA Victor PART No.	NOTES
M9	Tuner	KRK48D	VHF Ch. CTC9A
	Tuner	KRK75C	VHF Ch. CTC9F
	Tuner	KRK75D	VHF Ch. CTC9N
	Tuner	KRK49D	VHF with UHF provisions Ch. CTC9B
	Tuner	KRK76C	VHF with UHF provisions Ch. CTC9H
	Tuner	KRK76D	VHF with UHF provisions Ch. CTC9P
	Tuner	KRK66M	UHF Ch. CTC9B
	Tuner	KRK66AA	UHF Ch. CTC9H
	Tuner	KRK66AB	UHF Ch. CTC9P
M10	Delay Line	105253	
M11	Crystal	105330	3.579545MC
M12	Magnet	105024	Convergence (3 used)
M13	Magnet	103172	Lateral Assembly
M14	Magnet	105027	Color Equalizer (12 used)
M15	Magnet	106460	Color Equalizer Ring
M16	Purity Coil Ring	79604	
	Printed Board	107293	Sound, Less Tubes
	Printed Board	107294	Video IF, Less Tubes
	Printed Board	107511	Video, Less Tubes
	Printed Board	107512	Vert., Less Tubes
	Printed Board	107295	Sync, Less Tubes
	Printed Board	106318	Convergence
	Microphone	107630	Remote Transducer Model 210CTR845, 7
	Microphone	107437	Remote Transducer Models 210CKR940, 6, U

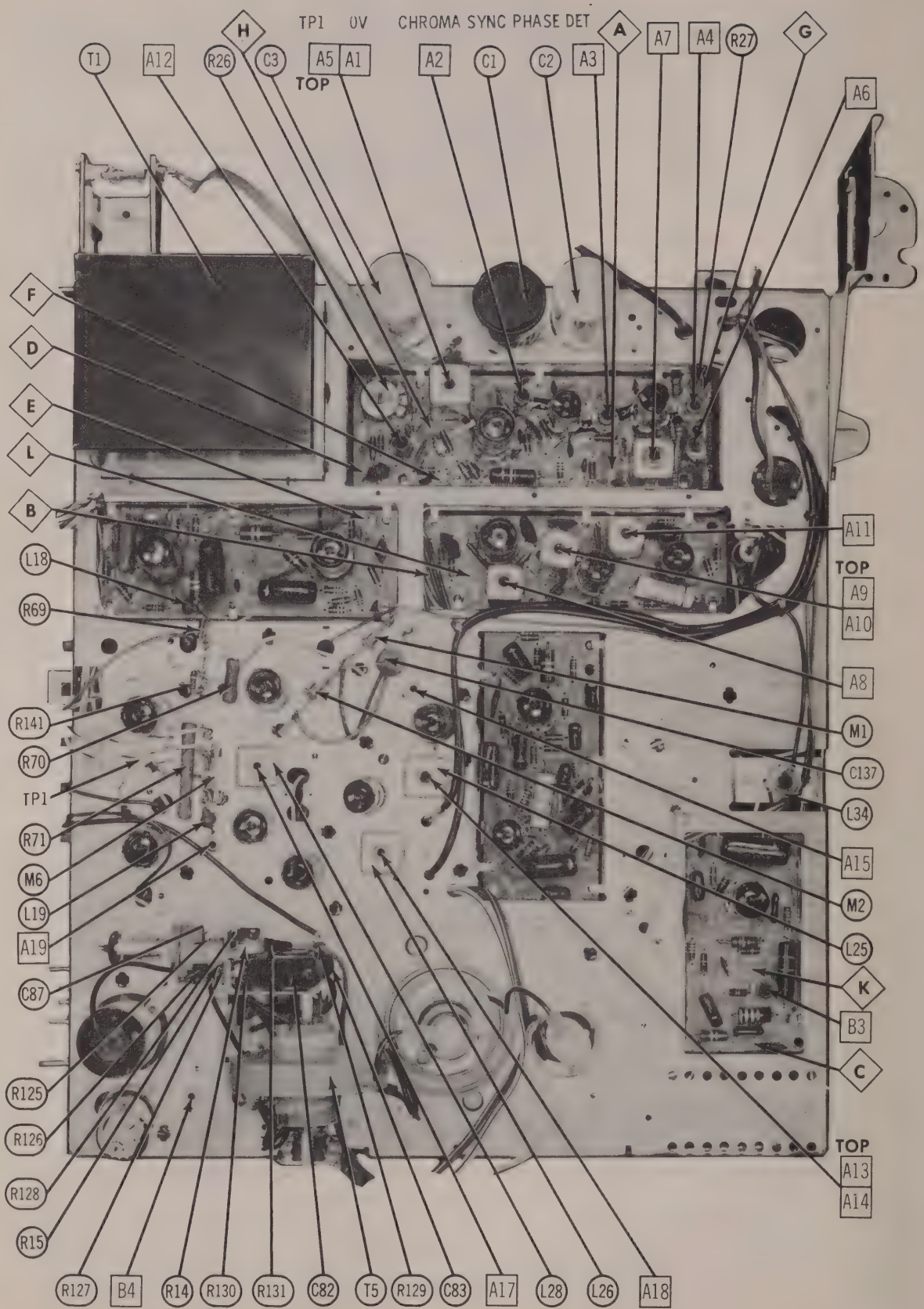
CABINETS & CABINET PARTS

(When Ordering Cabinets & Cabinet Parts, Specify Model, Chassis & Color)

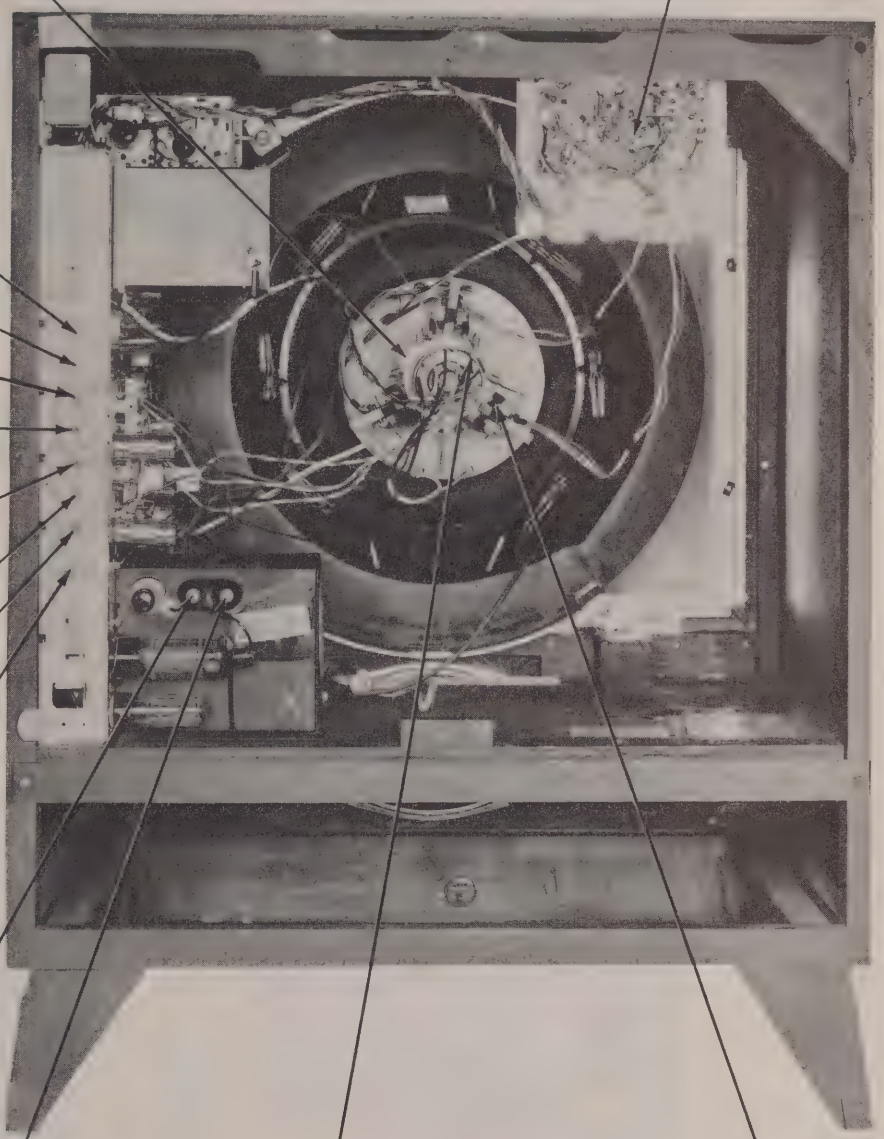
NAME	PART NO.	DESCRIPTION
Safety Glass	106781	All Models except 210CT822, U
Safety Glass	105014	Models 210CT822, U
Mask	106459	All Models except 210CT822, U
Mask	107403	Models 210CT822, U
Knob	107462	VHF Channel Selector, Maroon, Models 210CT822, U
Knob	107303	VHF Channel Selector, Taupe, Models 210CK855, 6, 7, & U
Knob	107302	VHF Channel Selector, Wine, Models 210CK855, U
Knob	107372	VHF Channel Selector, Clear, Models 210CK885, 6, 9, U, 210CK905, 6, 7, & U, 210CK920, 4 & U, 210CK935, 6 & U, 210CKR940, 7, & U, 210CT835, 6, 7 & U, 210CTR845
Knob	102580	UHF Tuning, Brown Maroon, Model 210CT822U
Knob	102578	UHF Tuning, Taupe, Models 210CK856U, 7U
Knob	102653	UHF Tuning, Wine, Model 210CK855U
Knob	107269	UHF Tuning, Clear, Models 210CK885U, 6U, 7U, 210CK905U, 6U, 7U, 210CK920U, 4U, 210CK935U, 6U, 210CKR940U, 6U, 210CT835U, 6U, 7U
Knob	106311	Fine Tuning, Maroon, Models 210CT822, U
Knob	104988	Fine Tuning, Taupe, Models 210CK856, 7, & U
Knob	104987	Fine Tuning, Wine, Models 210CK855, U
Knob	106596	Fine Tuning, Clear, Models 210CK885, 6, 9 & U, 210CK905, 6, 7 & U, 210CK920, 4 & U, 210CK935, 6 & U, 210CKR940, 7 &U, 210CT835, 6, 7, & U, 210CTR845, 7
Knob	106104	UHF Dial, Brown Maroon, Model 210CT822U
Knob	106103	UHF Dial, Gray, Models 210CK856U, 7U
Knob	106102	UHF Dial, Wine, Model 210CK855U
Knob	107266	UHF Dial, Clear, Models 210CK885U, 6U, 9U, 210CK905U, 6U, 7U, 210CK920U, 4U, 210CK935U, 6U, 210CKR940U, 6U, 210CT835U, 6U, 7U
Knob	107398	Off-On-Volume, Brightness, Brown Maroon, Models 210CT822, U
Knob	106615	Off-On-Volume, Brightness, Wine, Models 210CK855, U
Knob	106616	Off-On-Volume, Brightness, Taupe, Models 210CK855, 6, 7 & U
Knob	106278	Off-On-Volume, Brightness, Clear, Models 210CK885, 6, 9, & U, 210CK905, 6, 7 & U, 210CK920, 4 & U, 210CK935, 6 & U, 210CKR940, 6 & U, 210CTR845, 7, 210CT835, 6, 7 & U
Knob	107399	Color or Tint, Brown Maroon, Models 210CT822, U
Knob	106618	Color or Tint, Taupe, Models 210CK856, 7 & U
Knob	106617	Color or Tint, Wine, Models 210CK855, U
Knob	107603	Color or Tint, Clear, Models 210CK885, 6, 9 & U, 210CK905, 6, 7 & U, 210CK920, 4 & U, 210CK935, 6 & U, 210CKR940, 7 & U, 210CT835, 6, 7 & U, 210CTR845, 7
Knob	100407	Focus
Knob	106317	Horizontal, Maroon, Models 210CK855, 6, 7 & U, 210CT822, U
Knob	79533	Horiz. Freq., knurled
Knob	102581	Tone, Contrast, Vert., Maroon, Models 210CK855, 6, 7 & U, 210CT822, U
Knob	107605	Tone, Contrast, Vert., Clear, Models 210CK885, 6, 9 & U, 210CK905, 6, 7, &U, 210CK920, 4 & U, 210CK935, 6 & U, 210CKR940, 6 & U, 210CT835, 6, 7 & U, 210CTR845, 7
Escutcheon	105031	Color & Tint Control Marker, Models 210CK855, 6, 7 & U
Escutcheon	107607	Color-On-Volume Bar, Models 210CK885, 6, 9 & U, 210CK905, 6, 7 & U, 210CK920, 4, & U, 210CK935, 6 & U, 210CKR940, 6 & U, 210CTR845, 7
Escutcheon	106512	Fine Tuning
Escutcheon	107606	Tint-Bright Bar, Models 210CK885, 6, 9 & U, 210CK905, 6, 7 & U, 210CK920, 4, & U, 210CK935, 6 & U, 210CKR940, 6 & U, 210CTR845, 7
Escutcheon	107631	Microphone
Cabinet	Z4571	Models 210CT822, U
Cabinet	M4652	Models 210CK855, U
Cabinet	M4653	Models 210C K856, U
Cabinet	M4654	Models 210CK857, U
Cabinet	X4609	Models 210CK885, U
Cabinet	X4610	Models 210CK886, U
Cabinet	X4611	Models 210CK887, U
Cabinet	X4612	Models 210CK905, U
Cabinet	X4613	Models 210CK906, U
Cabinet	X4614	Models 210CK907, U
Cabinet	Z4576	Models 210CT835, U
Cabinet	Z4577	Models 210CT836, U
Cabinet	Z4578	Models 210CT837, U
Cabinet Leg	X5125	Models 210CT835, 6, 7 & U

WIRING DATA

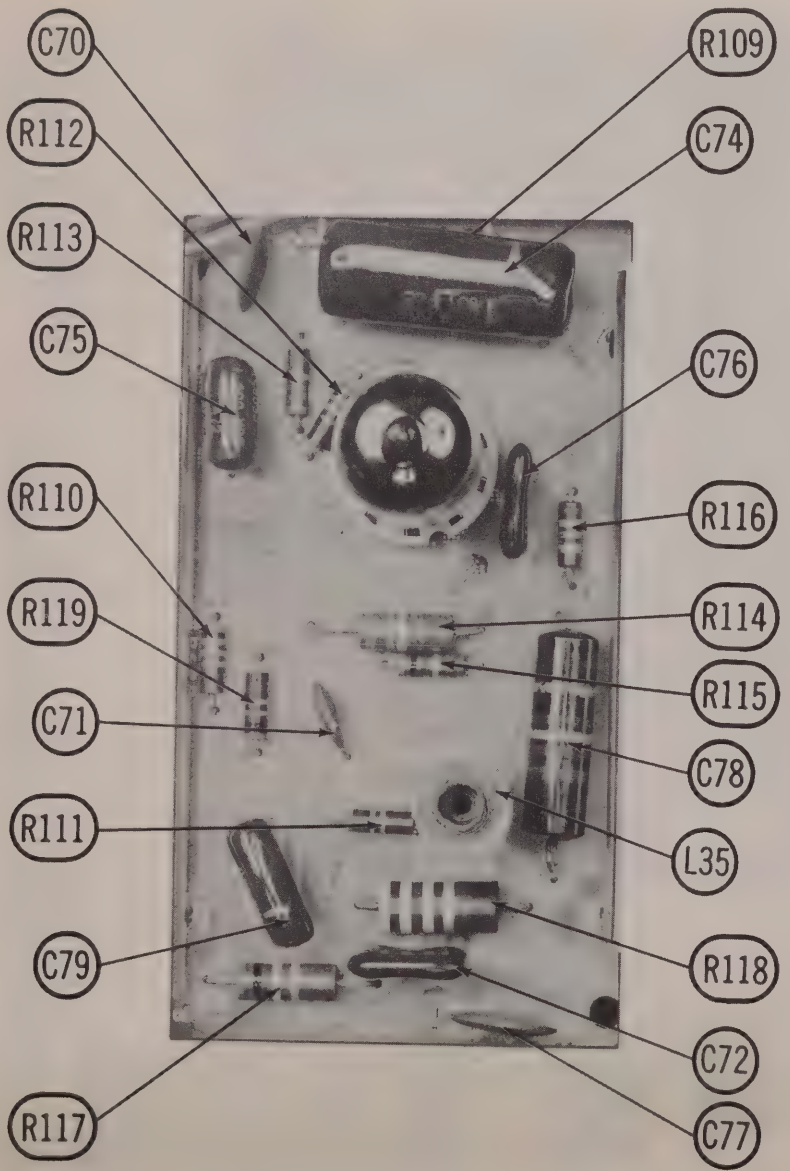
High Voltage Lead	Use BELDEN No.	8869
Shielded Hook-up Wire	Use BELDEN No.	8885 (Single Conductor) 8738 (Two Conductor)
General-use Unshielded Hook-up Wire	Use BELDEN No.	8530 (Solid) Available in Ten Colors 8524 (Stranded) Available in Ten Colors
Power Cord (Interlock Type)	Use BELDEN No.	8874
300Ω Tuner Input Lead	Use BELDEN No.	8225
300Ω Antenna Lead-in	Use BELDEN No.	8230 or 8275
Antenna Rotor Cable	Use BELDEN No.	8464 (Flat) or 8484 (Round) - 4 Conductor 8485 (Round) - 5 Conductor 8488 (Round) - 8 Conductor



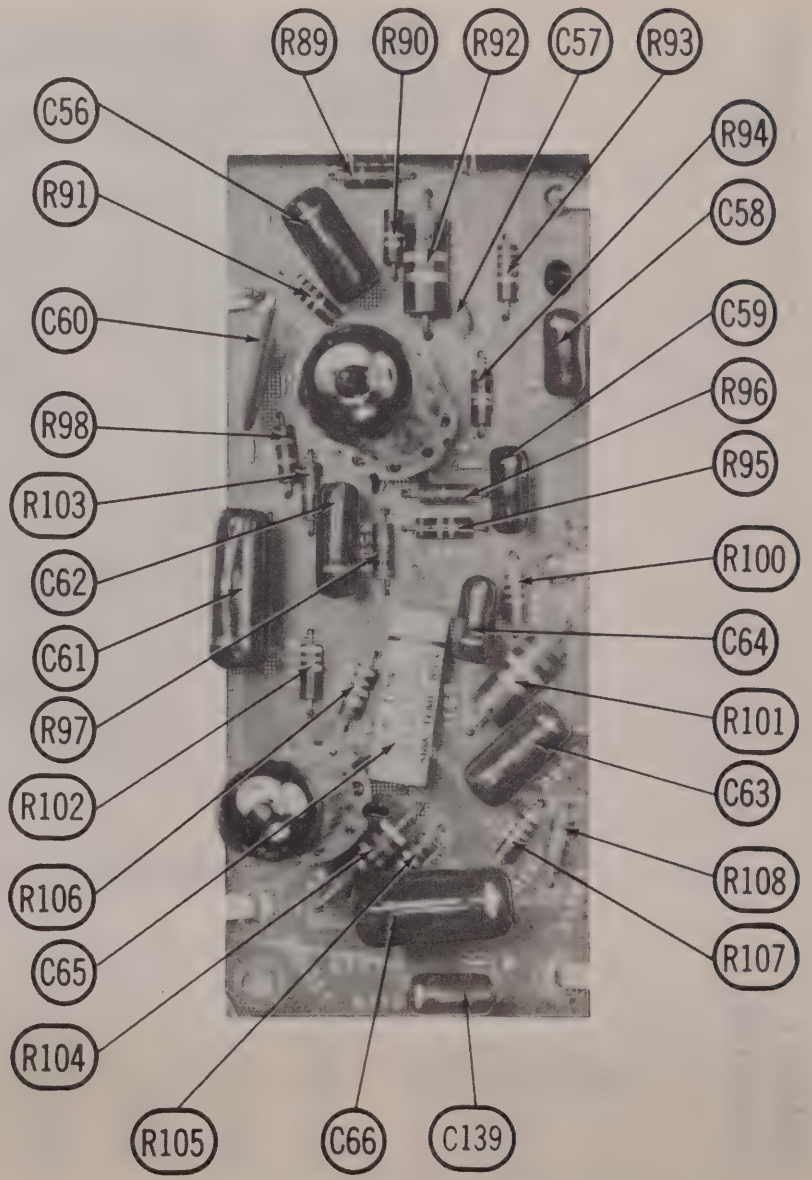
CHASSIS TOP VIEW



CABINET-REAR VIEW



HORIZ PRINTED BOARD



VERTICAL PRINTED BOARD

VIDEO IF PRINTED BOARD

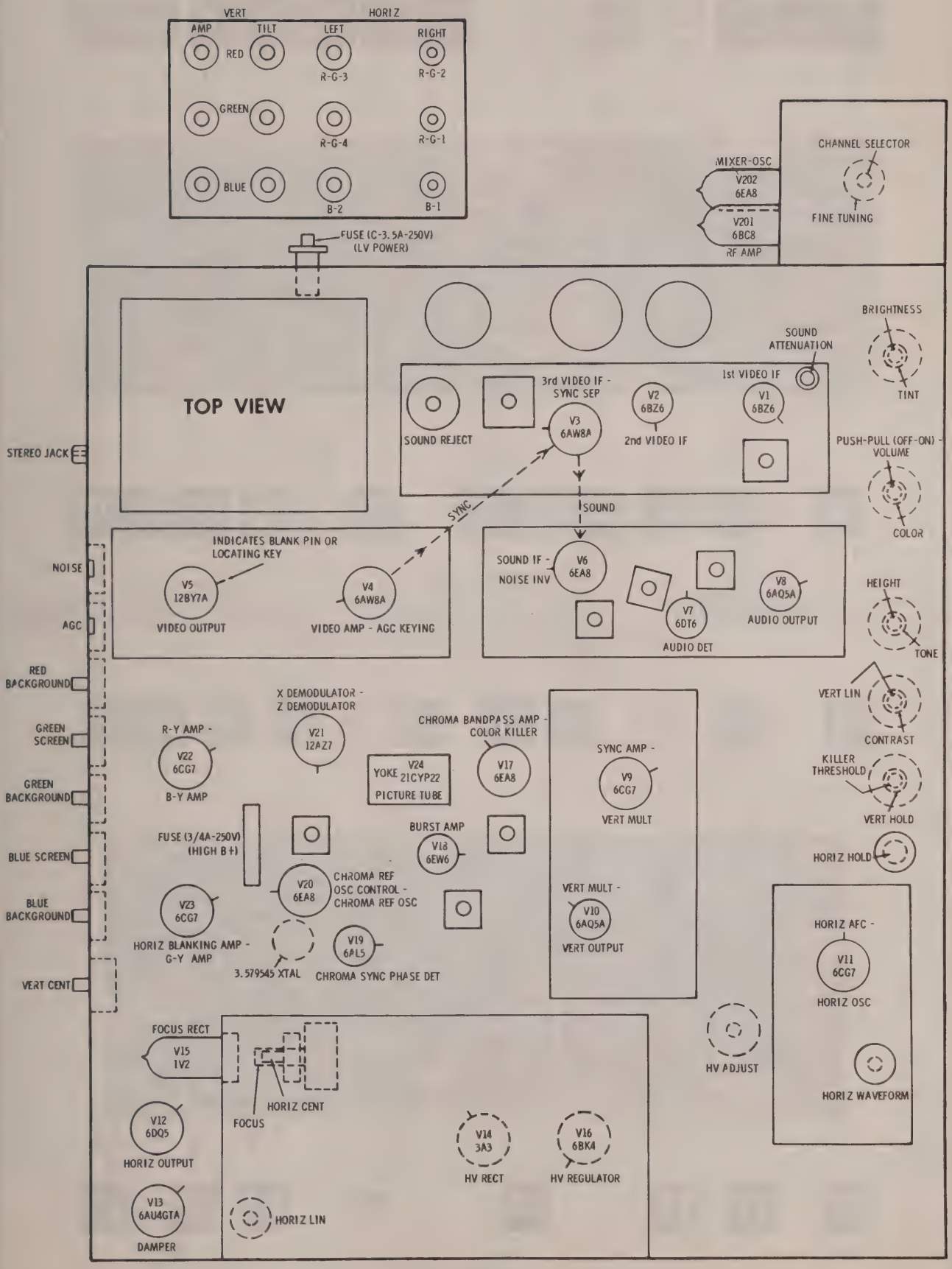
RESISTANCE MEASUREMENTS

ITEM	TUBE	Pin 1	Pin 2	Pin 3	Pin 4	Pin 5	Pin 6	Pin 7	Pin 8	Pin 9
V1	6BZ6	100K	47Ω	0Ω	.1Ω	†4000Ω	†4000Ω	0Ω		
V2	6BZ6	100K	82Ω	.1Ω	0Ω	†4000Ω	†4000Ω	0Ω		
V3	6AW8A	0Ω	10meg	▪ 1meg	.1Ω	0Ω	150Ω	.1Ω	†6500Ω	†6500Ω
V4	6AW8A	▪ 0Ω	500K	700K	.1Ω	0Ω	1000Ω	5500Ω	†25K	†7000Ω
V5	12BY7A	● 500Ω	● 500K	0Ω	.1Ω	.1Ω	0Ω	†4500Ω	†25K	0Ω
V6	6EA8	†25K	6.5Ω	▪ 3300Ω	.1Ω	0Ω	▪ 3300Ω	82Ω	1000Ω	1.1meg
V7	6DT6	4.6Ω	470Ω	.1Ω	0Ω	†700K	▪ 3300Ω	470K		
V8	6AQ5A	1.2meg	¶60K	.1Ω	0Ω	†350Ω	†800Ω	1.2meg		
V9	6CG7	▪ 10K	33K	0Ω	.1Ω	0Ω	● ‡5meg	● 2.5meg	0Ω	0Ω
V10	6AQ5A	2.5meg	25Ω	0Ω	.1Ω	†3200Ω	†2700Ω	2.5meg		
V11	6CG7	†0Ω	330K	500K	.1Ω	0Ω	†33K	600K	0Ω	0Ω
V12	6DQ5	10meg	0Ω	0Ω	†15K	10meg	0Ω	.1Ω	†15K	TOP CAP ‡15Ω
V13	6AU4GTA	NC	NC	¶400K	NC	†9.5Ω	NC	0Ω	.1Ω	
V14	3A3	PINS 1 THRU 8 HAVE INFINITE RESISTANCE								TOP CAP ‡610Ω
V15	1V2	TP	NC	NC	66meg	66meg	66meg	NC	NC	● ‡90K
V16	6BK4	†9Ω	¶25K	NC	NC	1meg	NC	¶25K	NC	TOP CAP INF
V17	6EA8	630K	420K	†1300Ω	.1Ω	0Ω	†1300Ω	820Ω	0Ω	500K
V18	6EW6	33K	27K	0Ω	.1Ω	†1000Ω	†800Ω	0Ω		
V19	6AL5	4.5meg	5meg	0Ω	.1Ω	270Ω	0Ω	270Ω		
V20	6EA8	†13K	47K	†47K	0Ω	.1Ω	†1800Ω	0Ω	680Ω	5meg
V21	12AZ7	†4700Ω	● 130Ω	860Ω	.1Ω	.1Ω	†4700Ω	● 130Ω	860Ω	0Ω
V22	6CG7	†15K	1meg	560Ω	.1Ω	0Ω	†13K	1meg	560Ω	0Ω
V23	6CG7	†39K	120K	820Ω	.1Ω	0Ω	†13K	1meg	560Ω	0Ω
V24	21CYP22	¶25K	†120K	‡110K	†7200Ω	†2700Ω	†120K	● ‡550K	NC	66meg
		Pin 10 NC	Pin 11 ● ‡550K	Pin 12 †110K	Pin 13 †2700Ω	Pin 14 ¶25K				
V201	6BC8	†5500Ω	550K	560K	0Ω	.1Ω	560K	800K	0Ω	0Ω
V202	6EA8	†7600Ω	100K	INF	0Ω	.1Ω	INF	0Ω	INF	INF
ITEM	TUBE	Pin 1	Pin 2	Pin 3	Pin 4	Pin 5	Pin 6	Pin 7	Pin 8	Pin 9

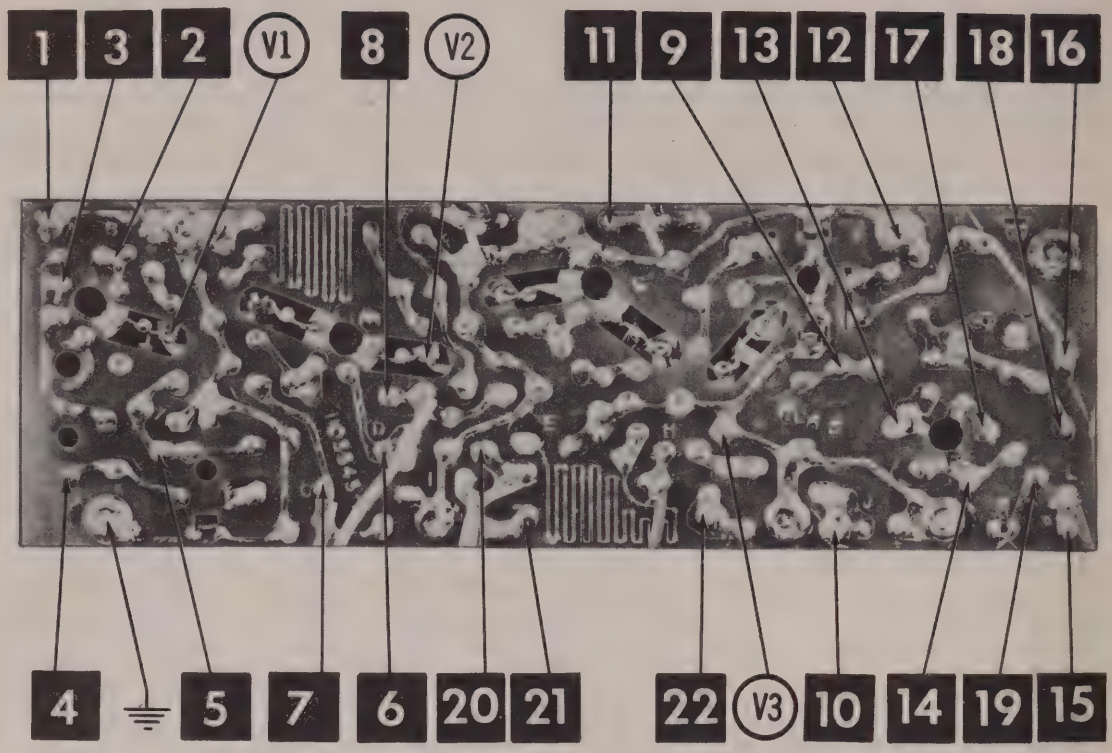
¶ THIS READING WILL VARY DEPENDING UPON THE CONDITION OF THE ELECTROLYTIC IN THE CIRCUIT.
▪ THIS READING WILL VARY. CONTROL SET FOR NORMAL OPERATION.
† MEASURED FROM 385V SOURCE.
▪ MEASURED FROM 140V SOURCE.
‡ MEASURED FROM PIN 3 OF V13.

NC NO CONNECTION
TP TIE POINT

TUBE PLACEMENT CHART



CircuiTrace numbers 1 thru 22



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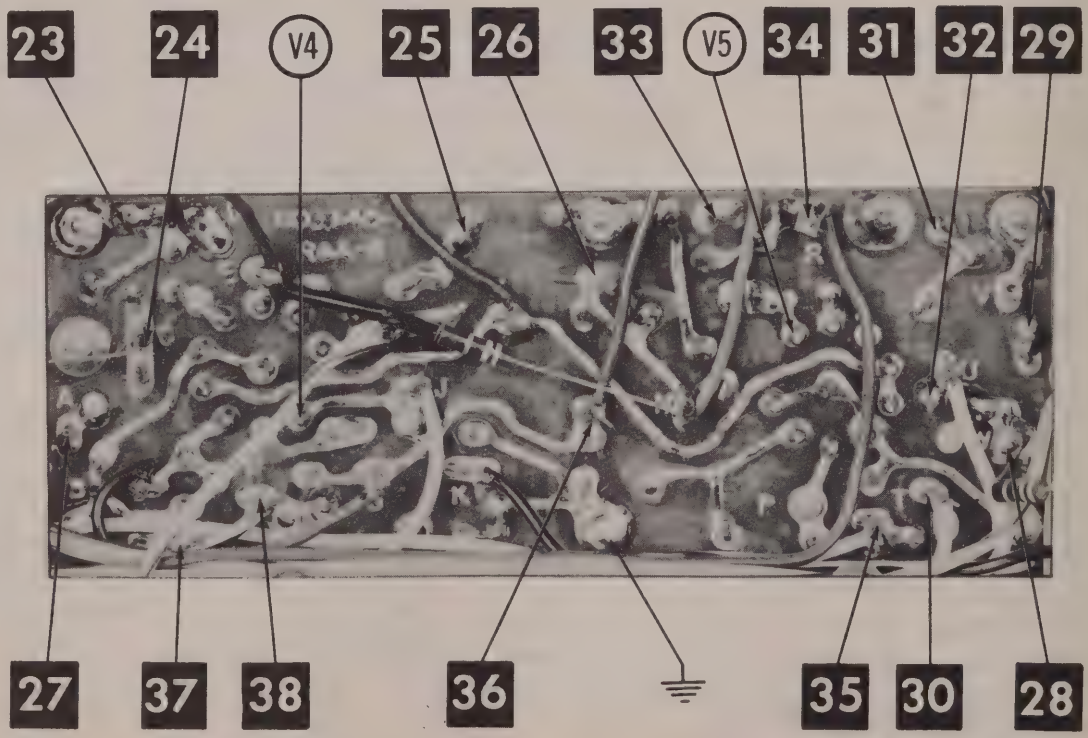
VIDEO IF
PRINTED BOARD

ARROWS INDICATING TUBE LOCATIONS ARE POINTING TO PIN 1 UNLESS OTHERWISE INDICATED

CircuiTrace Numbers 23 thru 38



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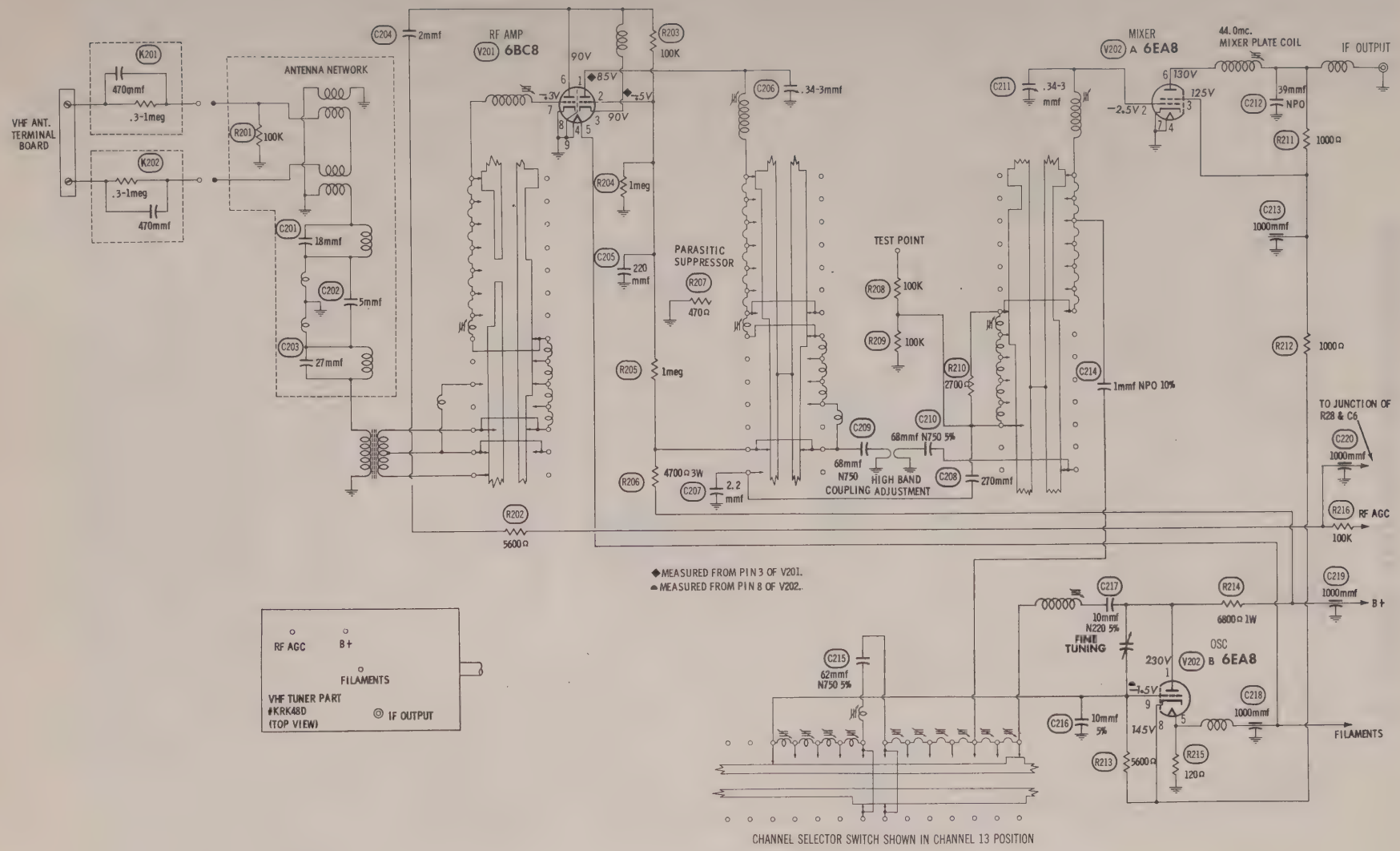
VIDEO
PRINTED BOARD

ARROWS INDICATING TUBE LOCATIONS ARE POINTING TO PIN 1 UNLESS OTHERWISE INDICATED



A PHOTOFACT STANDARD NOTATION SCHEMATIC

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VHF TUNER KRK48D, 75C, 75D

RCA VICTOR CHASSIS CTC9A, B, F, H, N, P

TUNER
KRK48D

PARTS LIST AND DESCRIPTIONS

TUBES

• CBS • GENERAL ELECTRIC • RAYTHEON • SYLVANIA •

ITEM No.	USE	TYPE
V201	RF Amplifier	6BC8

ITEM No.	USE	TYPE
V202	Mixer-Osc.	6EA8

FIXED CAPACITORS

Capacity values given in the rating column are in mfd. for Paper Capacitors, and in mmfd. for Mica and Ceramic Capacitors.

ITEM No.	RATING			REPLACEMENT DATA						NOTES
	CAP.	VOLT	TOL	RCA Victor PART No.	AEROVOX PART No.	CENTRALAB PART No.	CORNELL-DUBILIER PART No.	MALLORY PART No.	SPRAGUE PART No.	
C201	18				DI-18	DD-180	L10Q18	CNO-418	10TS-Q18	
C202	5				DI-5	DD-050	L10V5	ZT-555	10TS-V50	
C203	27				DI-27	DD-270	L10Q27	CNO-427	10TS-Q27	
C204	2					TCZ-2R2	C10V2C	CNO-522	10TCC-V22	
C205	220				DI-220	DD-221	L10T22	B-322	10TS-T22	
C206	.34-3									
C207	2.2					TCZ-2R2	C10V22C	CNO-522	10TCC-V22	
C208	270				DI-270	DD-271	L10T27	B-327	10TS-T27	
C209	68		N750		N750-DI 68	DTN-68	C10Q68U	CN7-468	10TCU-Q68	
C210	68		N750 5%			DTN-68	C10Q68U	CN7-468	10TCU-Q68	
C211	.34-3									
C212	39		NPO		NPO-DI 39	TCZ-39	C10Q39C	CNO-439	10TCC-Q39	
C213	1000				EF-001	MFT-1000				
C214	1		NPO 1%			TCZ-1		CNO-510	10TCC-V10	
C215	62		N750 5%			TCN-62	C10Q62U		10TCU-Q62S 5%	*
C216	10		5%			TCZ-10	C10Q1C	CNO-410	10TCC-Q10	
C217	10		N220 5%						10TCR-Q10	
C218	1000				EF-001	MFT-1000				
C219	1000				EF-001	MFT-1000				
C220	1000				EF-001	MFT-1000				

* Not normally in distributor's stock. Available thru distributor on order to manufacturer.

RESISTORS

All wattages 1/2 watt, or less, unless otherwise listed.

ITEM No.	RATING	REMARKS
R201	100K	
R202	5600Ω	
R203	100K	
R204	1meg	
R205	1meg	
R206	4700Ω 3W	

ITEM No.	RATING	REMARKS
R207	470Ω	
R208	100K	
R209	100K	
R210	2700Ω	
R211	1000Ω	
R212	1000Ω	

ITEM No.	RATING	REMARKS
R213	5600Ω	
R214	6800Ω 1W	
R215	120Ω	
R216	100K	

COMPONENT COMBINATIONS

ITEM No.	USE	DESCRIPTION	RCA Victor PART No.	REPLACEMENT DATA	
K201	Antenna Isolation	470mmf, .3-1meg	104328	Centralab Sprague	RC-471 AC1-1
K202	Antenna Isolation	470mmf, .3-1meg	104328	Centralab Sprague	RC-471 AC1-1

ALIGNMENT INSTRUCTIONS

PRE-ALIGNMENT INSTRUCTIONS

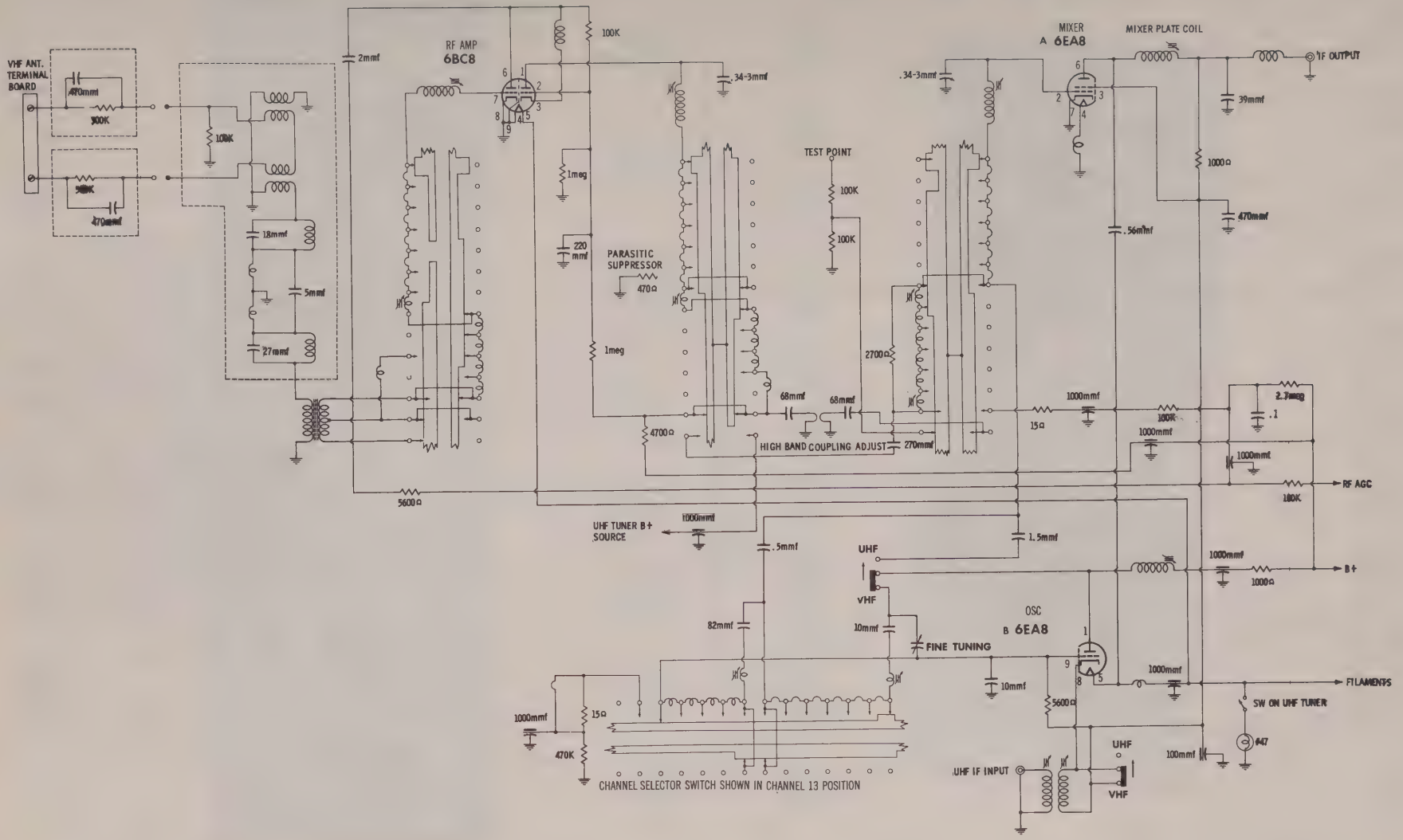
Suggested Alignment Tools: GENERAL CEMENT #5000, 5003, 5014, 5015, 5016, 8276, 8290
WALSCO #2512, 2515, 2522, 2523, 2525, 2537

VHF OSCILLATOR ALIGNMENT

Set the Fine Tuning to the center of its range. The adjustments should be made in sequence from the highest to the lowest channel in the area. Channel 13 adjustment is located at 2 o'clock. Proceed in a counterclockwise direction. Adjust for best picture and sound.

VHF RF AND MIXER ALIGMENT

This portion of the tuner has been properly aligned at the factory and is very stable . Alignment of this portion should not be attempted in the field.



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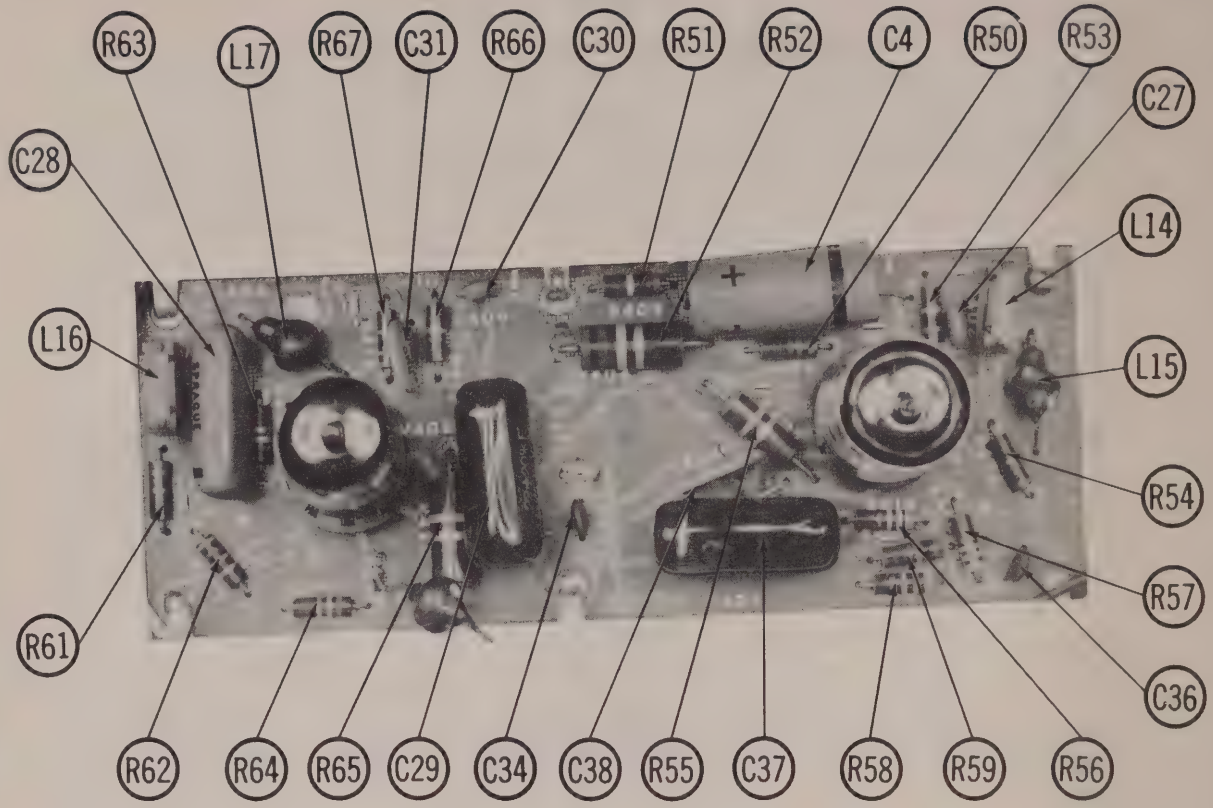
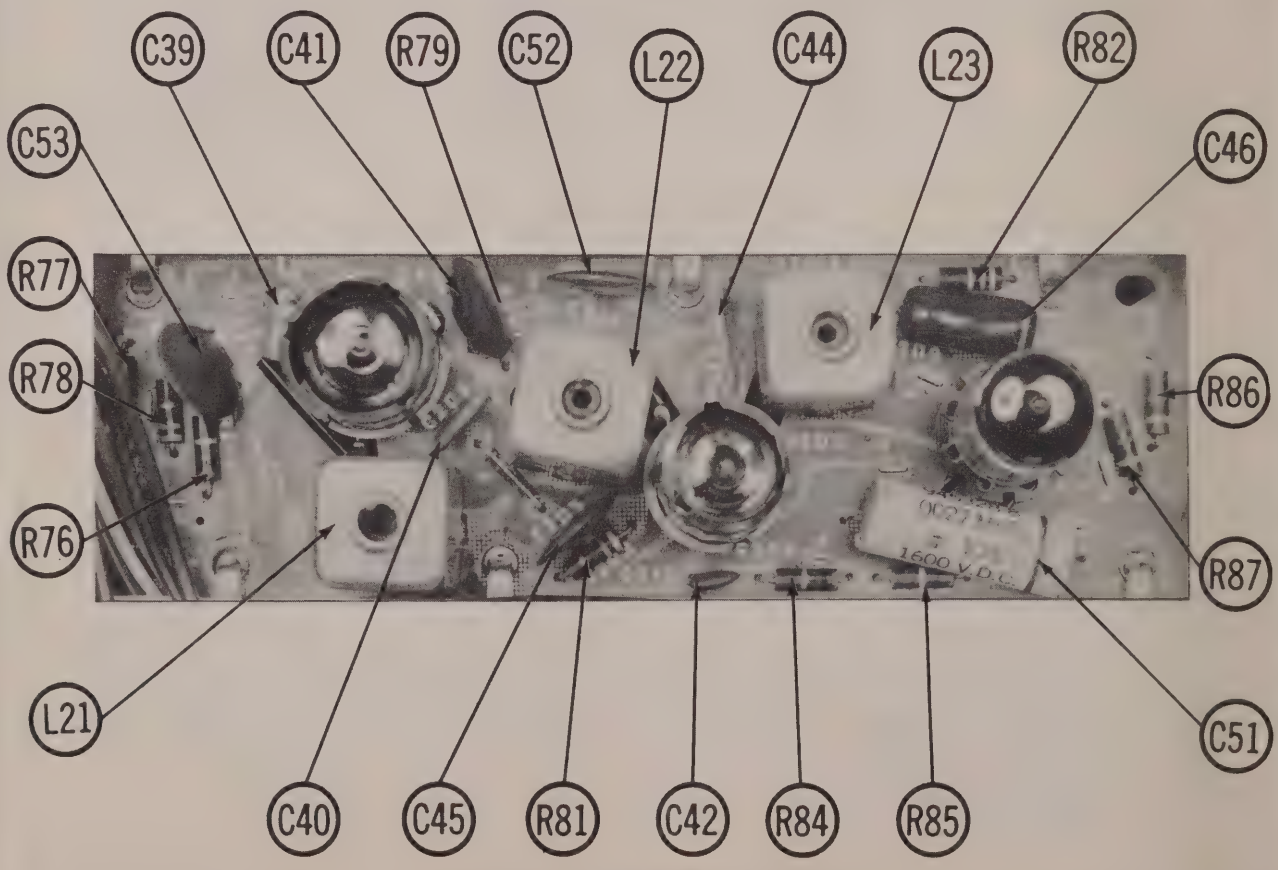
VHF TUNER with UHF provisions KRK49D, 76C, 76D

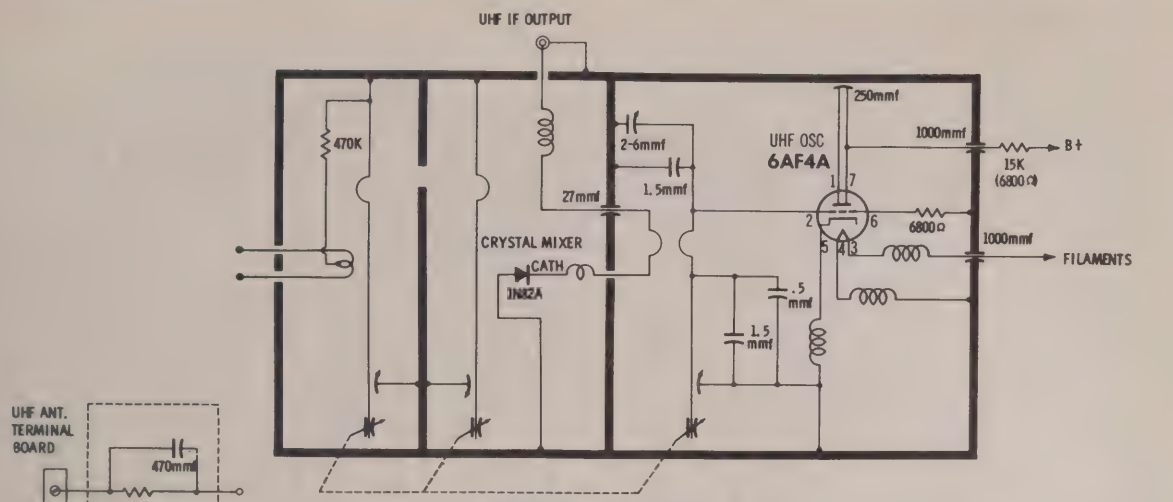
RCA VICTOR CHASSIS
CTC9A, B, F, H, N, P



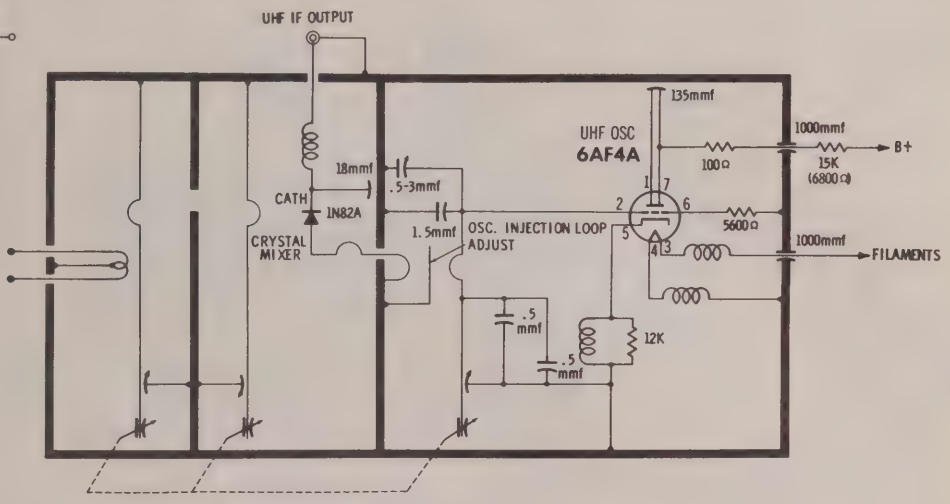
VIDEO PRINTED BOARD



SOUND PRINTED BOARD



KRK66M (962048)



KRK66M (962047)

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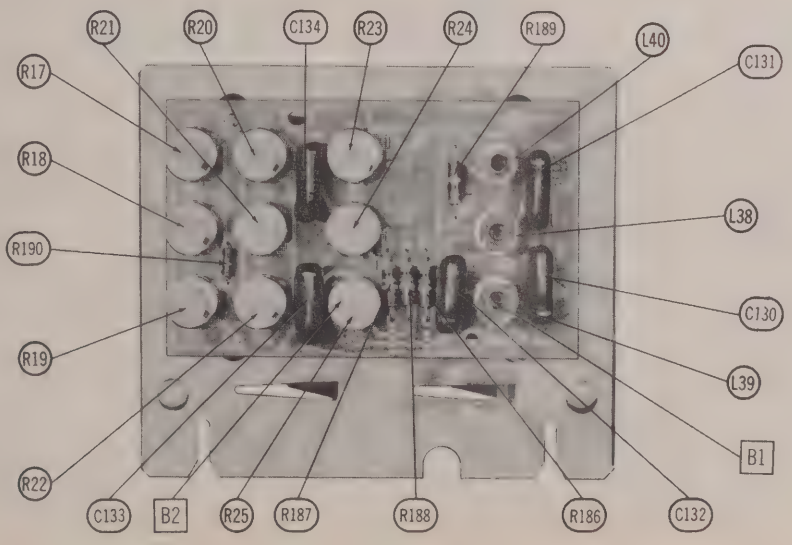
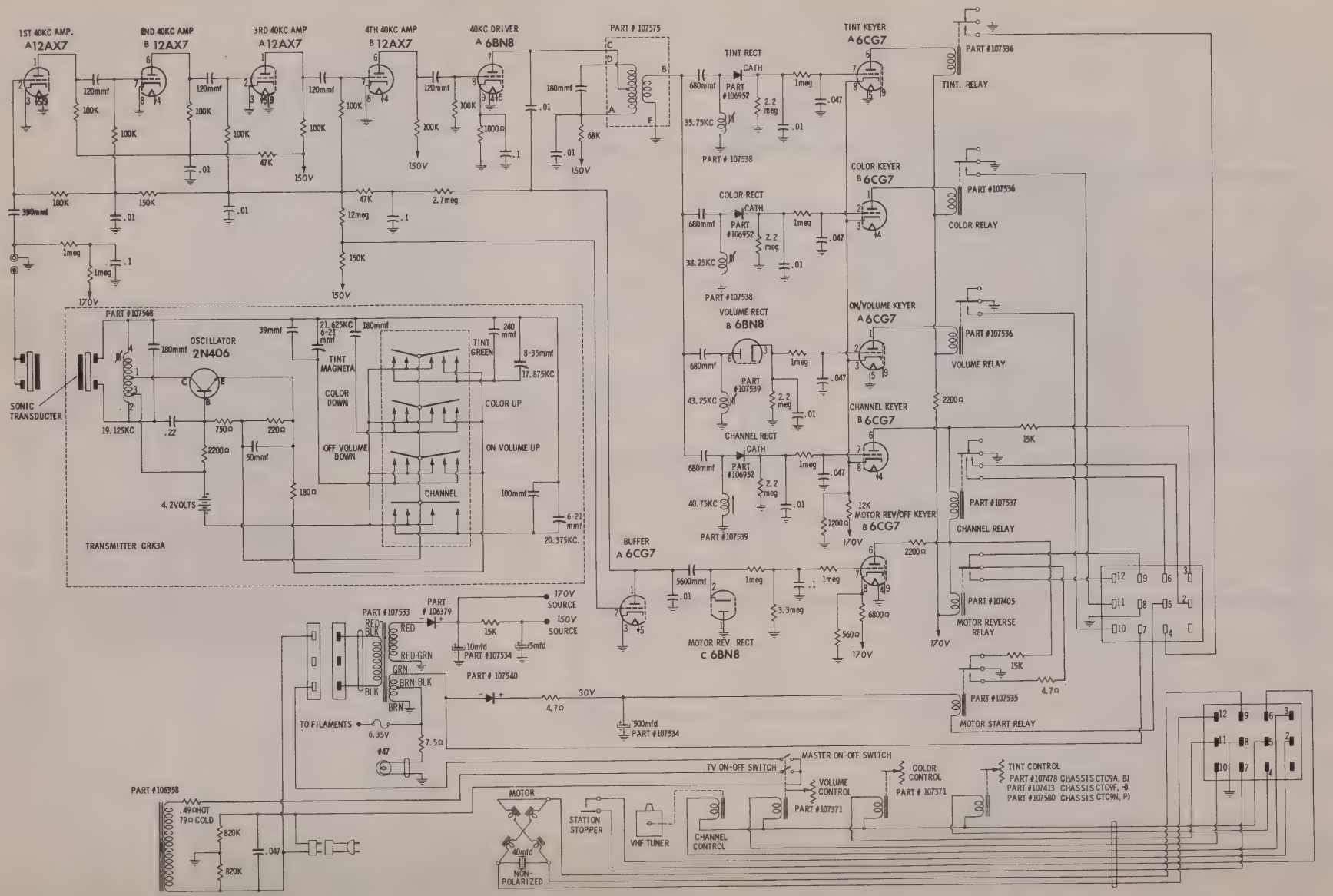
UHF TUNER



CONVERGENCE PRINTED BOARD



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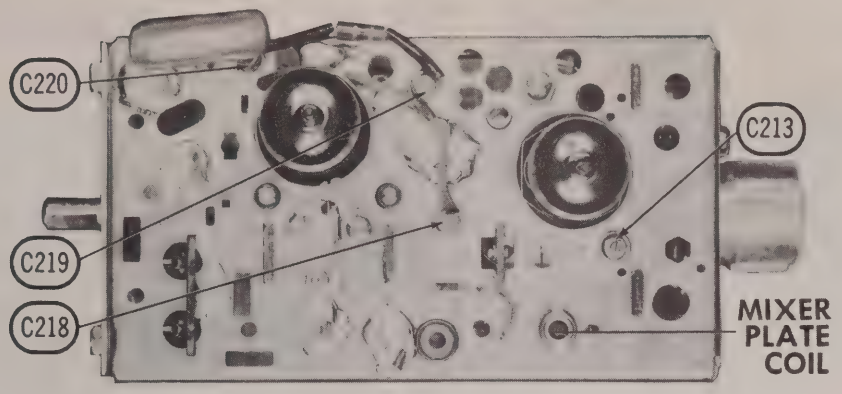
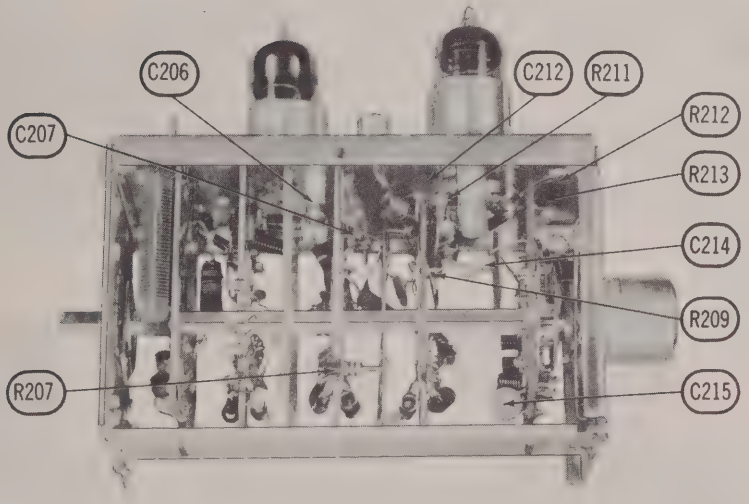
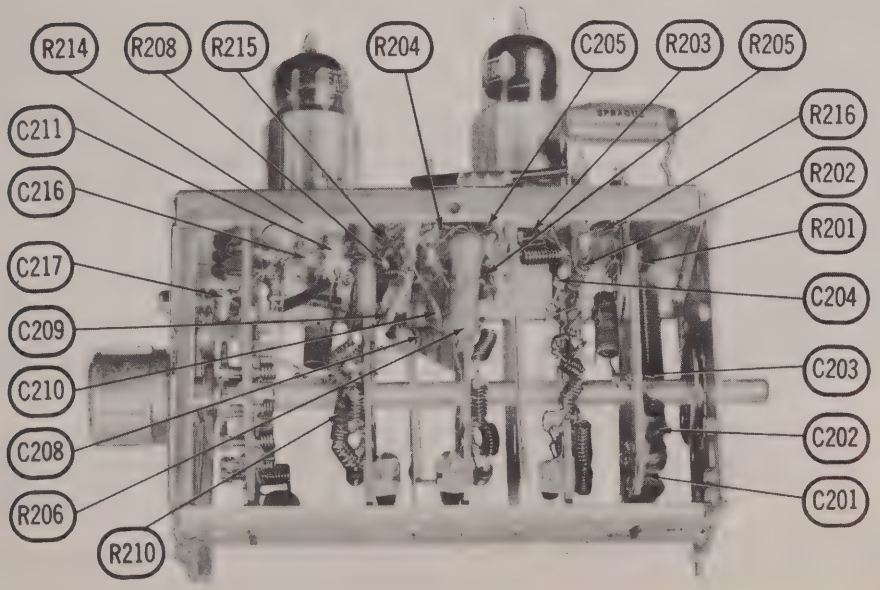
REMOTE CONTROL TRANSMITTER CRK3A & REMOTE CONTROL RECEIVER CTP7A

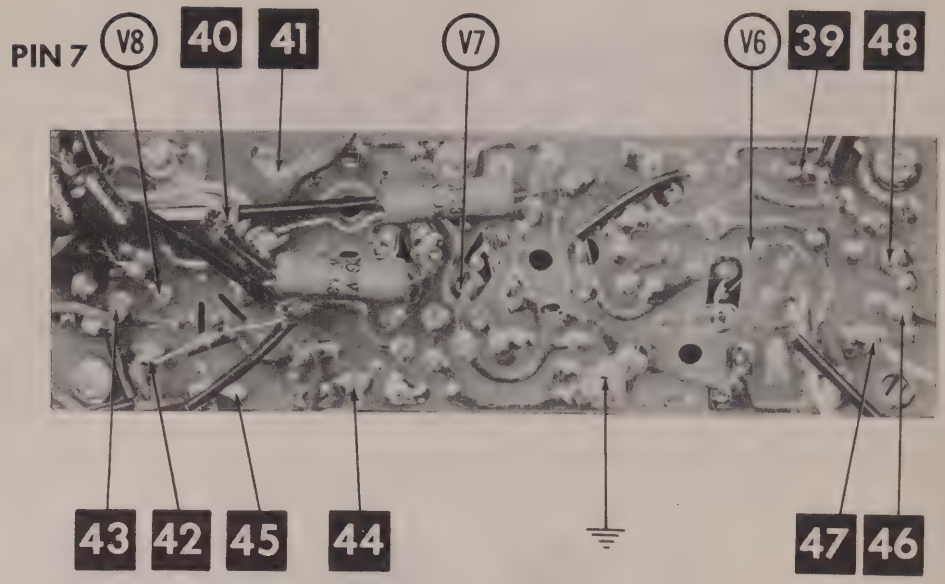






TUNER KRK48D

CircuiTrace numbers 39 thru 48



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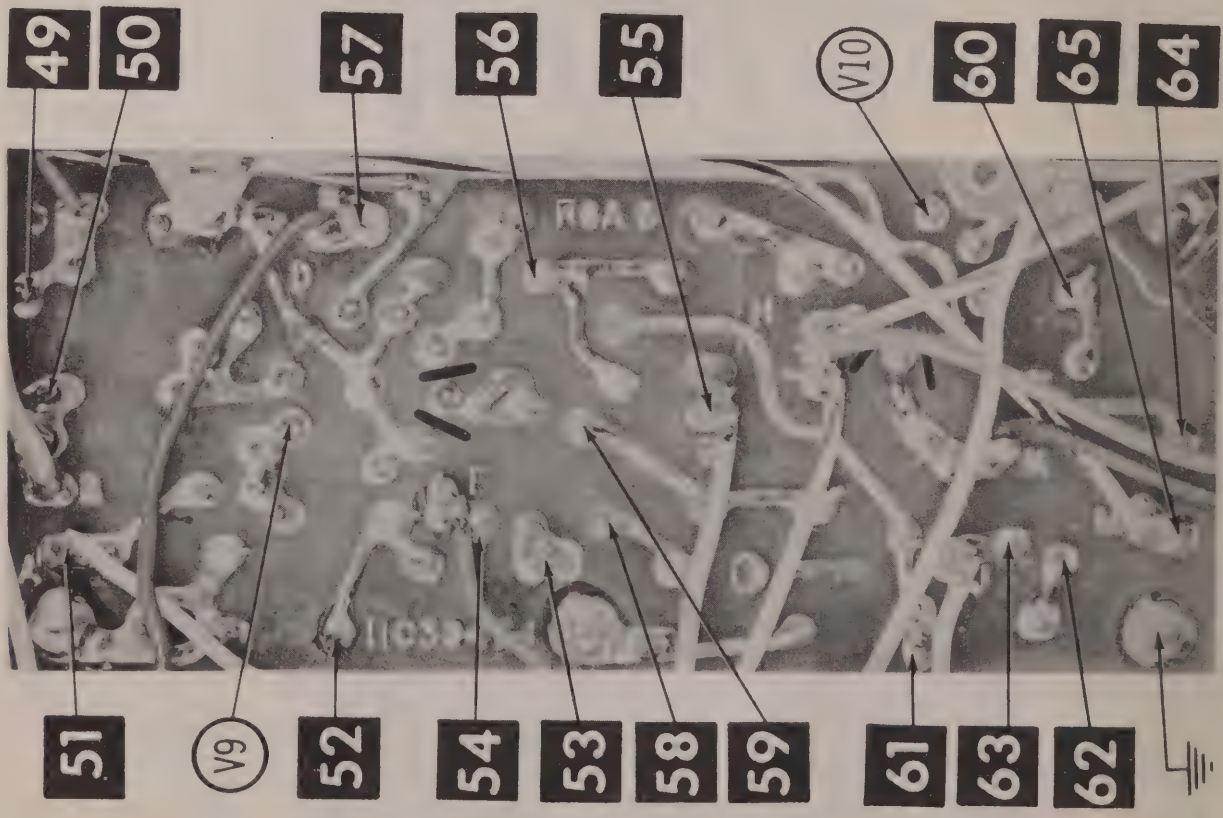
SOUND
PRINTED BOARD

ARROWS INDICATING TUBE LOCATIONS ARE POINTING TO PIN 1 UNLESS OTHERWISE INDICATED

CircuiTrace Numbers 49 thru 65

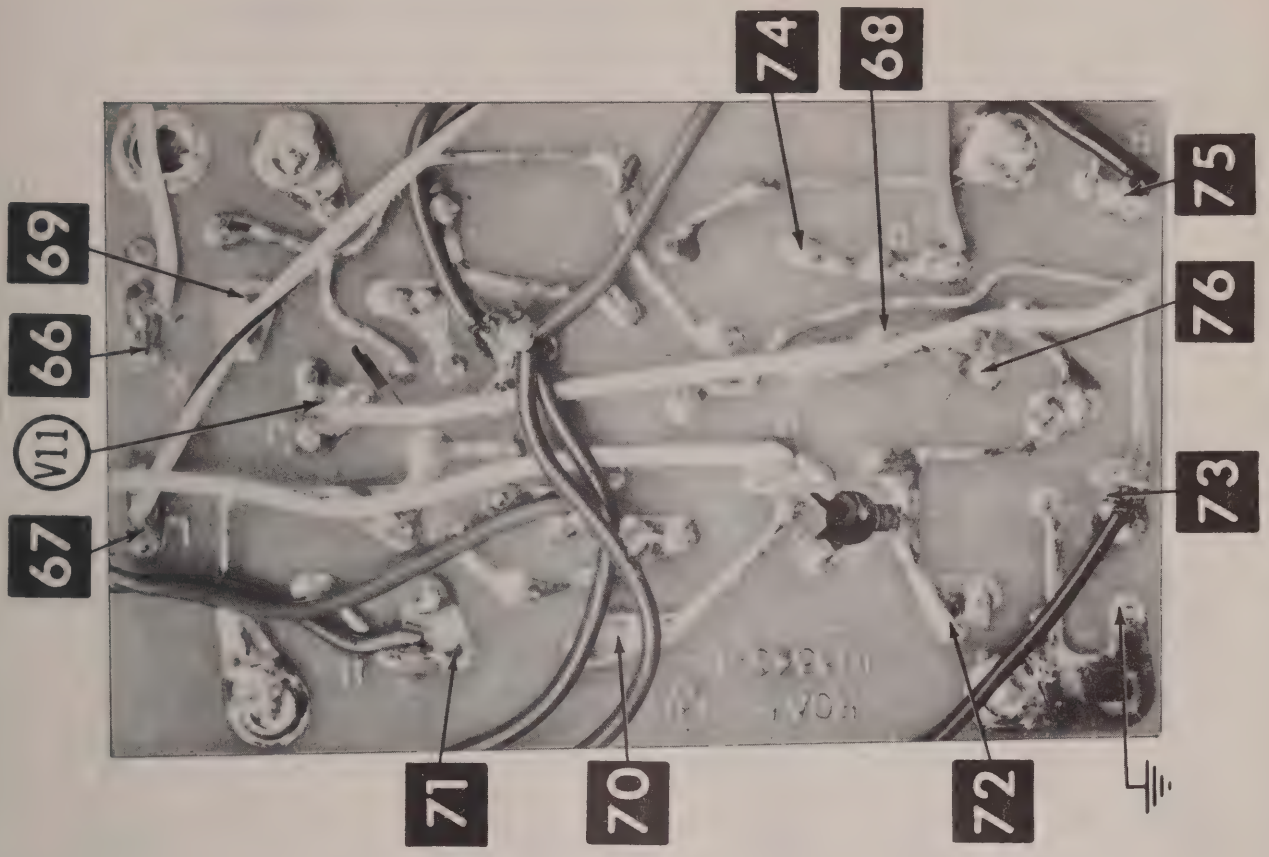


A Howard W. Sams CIRCUITRACE Photo

VERTICAL
PRINTED BOARD

ARROWS INDICATING TUBE LOCATIONS ARE POINTING TO PIN 1 UNLESS OTHERWISE INDICATED

CircuiTrace Numbers 66 thru 76



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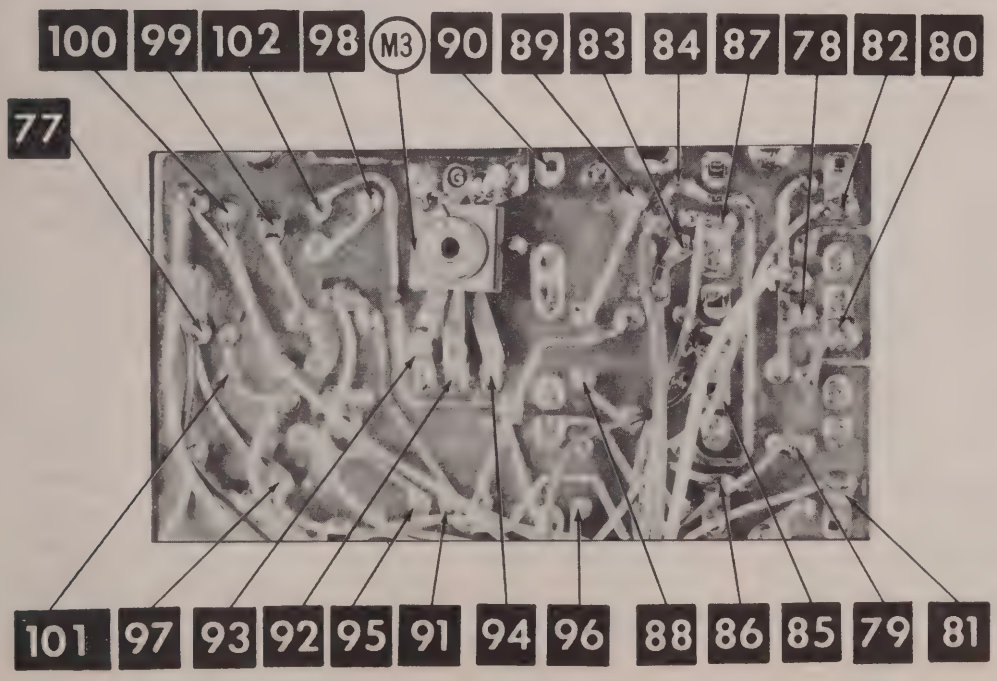
HORIZONTAL PRINTED BOARD

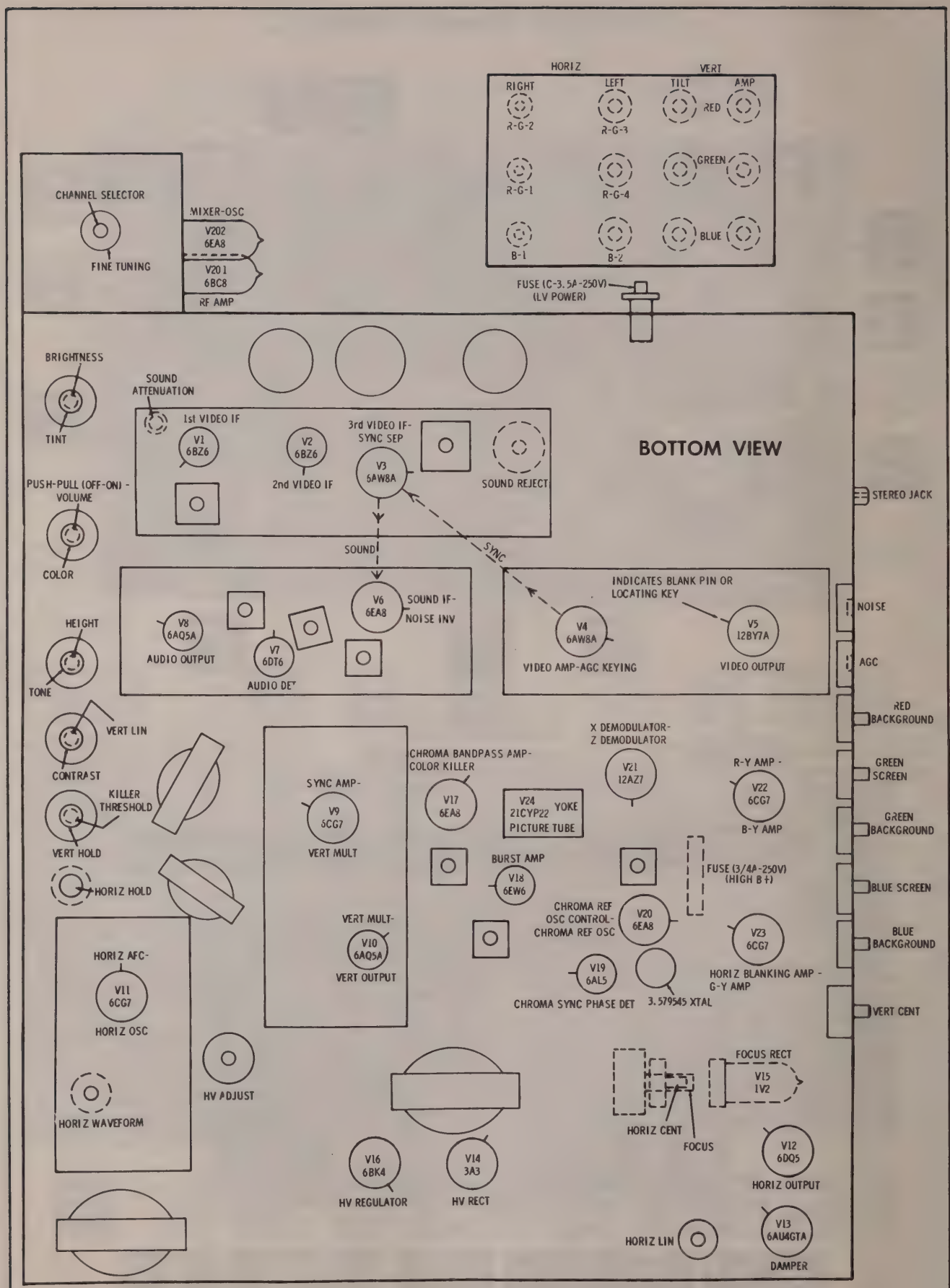
ARROWS INDICATING TUBE LOCATIONS ARE POINTING TO PIN 1 UNLESS OTHERWISE INDICATED

CircuiTrace Numbers 77 thru 102

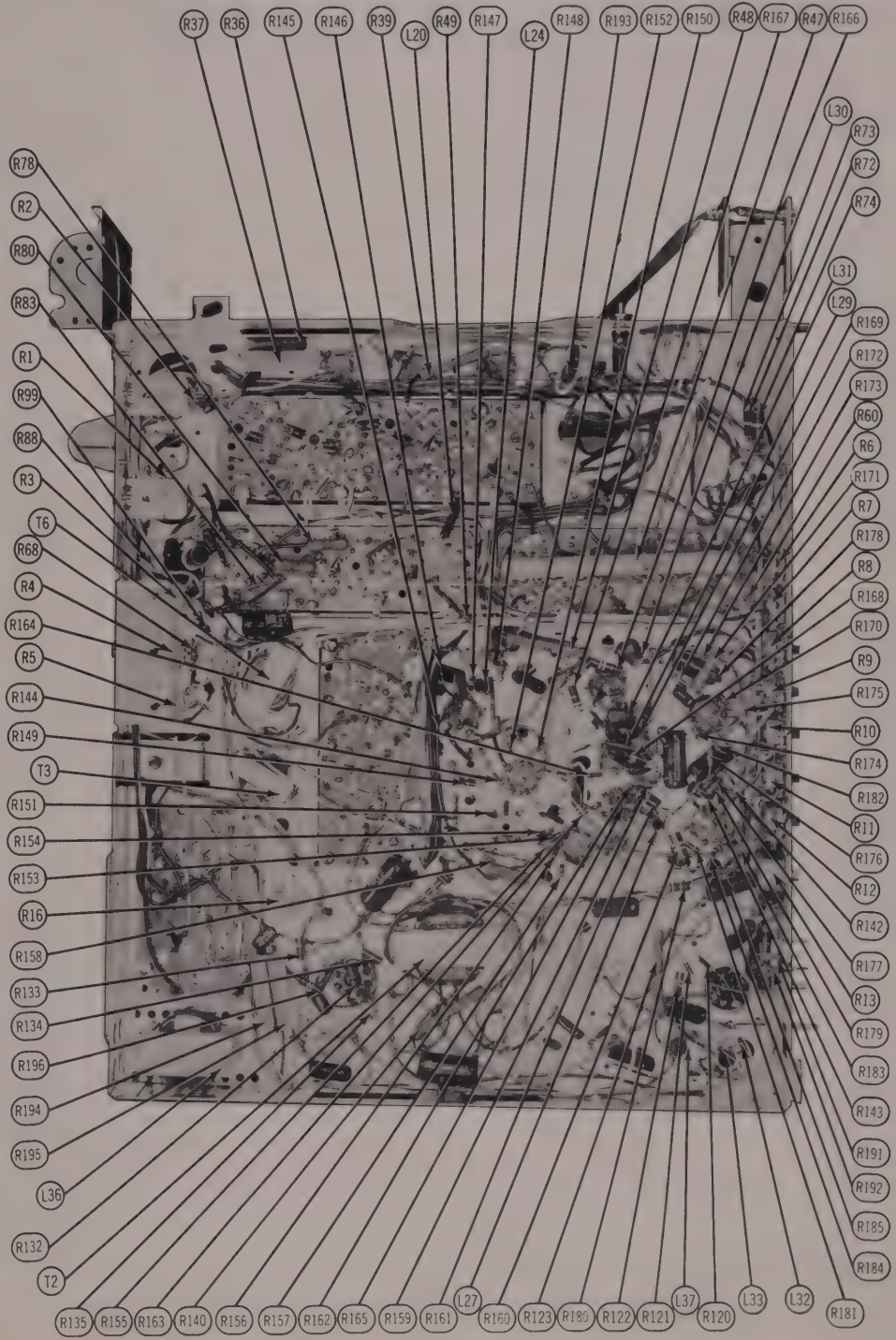


A Howard W. Sams CIRCUITRACE* Photo

CONVERGENCE PRINTED BOARD



TUBE PLACEMENT CHART



CHASSIS BOTTOM VIEW-RESISTOR AND INDUCTOR IDENTIFICATION

RCA VICTOR CHASSIS
CTC9A, B, F, H, N, P

PHOTOFACT* Folder with CIRCUITRACE*

EIA MEMBER ELECTRONIC INDUSTRIES ASSOCIATION

SILVERTONE CHASSIS 456.51640 thru 647, 528.51640 thru 647

IMPORTANT FILING NOTICE

The TV Folder for this envelope will be found among the first folders in this complete Set of folders.

Merely insert the corresponding folder on this model in this envelope to retain proper filing and indexing order.

SILVERTONE CHASSIS 456.51640 thru 647, 528.51640 thru 647

MODEL 118-5CH (Ch. 528.51643)

SILVERTONE CHASSIS 456.51640 thru 647, 528.51640 thru 647

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PHOTOFACT* Folder with CIRCUITRACE*

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SILVERTONE CHASSIS 456.51640 thru 647, 528.51640 thru 647

DISASSEMBLY INSTRUCTIONS

CHASSIS REMOVAL MODEL 118-5CH

1. Remove plug-in antenna connections from rear cover.
2. Remove 11 screws holding rear cover. Remove the rear cover.
3. Remove 7 push-on type knobs from the front and top of the cabinet.
4. Remove speaker leads, HV lead, yoke plug, picture tube socket, and grounding lead.
5. Remove two 1/4" hex head screws holding front control panel.
6. Remove 5 chassis bolts.
7. Tilt chassis out at the bottom and remove.
8. Remove front mask and safety glass by removing the 4 screws on front of cabinet and pulling mask and safety glass straight out.
9. Remove 4 bolts holding picture tube mounting strap now visible at front of the cabinet.
10. Remove picture tube from rear of cabinet.

MODEL 118-5CH (Ch. 528.51643)

CAUTION

ONE SIDE OF AC LINE CONNECTED TO CHASSIS.

TRADE NAME	Silvertone	MODELS	CHASSIS	MODELS	CHASSIS
		PC-104BL, GY, TA, PC-118CH, L	456.51640	104BL, GY, TA, 118CH, L	528.51640
			456.51642		528.51642
			456.51644		528.51644
			456.51646		528.51646
		PC-104-5BL, GY, TA, PC-118-5CH, L..	456.51641	104-5BL, GY, TA, 118-5CH, L	528.51641
			456.51643		528.51643
			456.51645		528.51645
			456.51647		528.51647

SUPPLIER Sears, Roebuck & Co., 925 S. Homan Avenue, Chicago, Illinois
TYPE SET Television Receiver
TUBES VHF-Sixteen, UHF-Seventeen
POWER SUPPLY 110-120 Volts AC, 60 Cycle RATING 155 Watts, 1.6 Amp. @ 117 Volts AC
TUNING RANGE Channels 2 thru 13 VHF, 14 thru 83 UHF, Video IF 45.75MC, Sound IF 41.25MC (Intercarrier)

SERVICING IN THE FIELD

SAFETY GLASS REMOVAL

Remove 4 push-on type knobs from the front. Remove 4 screws holding trim. Pull mask and safety glass straight out to remove.

FUSE DEVICE

A Circuit Breaker is used for low voltage power supply protection, and may be reset by depressing the reset button. (For location, see "Tube Placement Chart".)

TUNER OSCILLATOR ADJUSTMENTS

To touch-up the VHF Oscillator, it is necessary to remove the rear cover.

AGC

The AGC may be varied by means of an AGC control. (For location, see "Tube Placement Chart".)

FOCUS

The focus may be varied by connecting the lead from pin 4 of the picture tube to various voltage points. (For location, see photo "Cabinet-Rear View".)

HORIZONTAL OSCILLATOR FIELD ADJUSTMENTS

The Horizontal Frequency slug is used for the Horizontal Hold. (For location, see "Tube Placement Chart".)

WIDTH

The width may be varied by adjusting a metallic sleeve, located between the yoke and the picture tube neck, in or out of the yoke.

HORIZONTAL DRIVE

The horizontal drive may be varied by a Horizontal Drive control. (For location, see "Tube Placement Chart".)

CENTERING

Centering is accomplished by 2 magnetic rings, located behind the yoke, on the neck of the picture tube.

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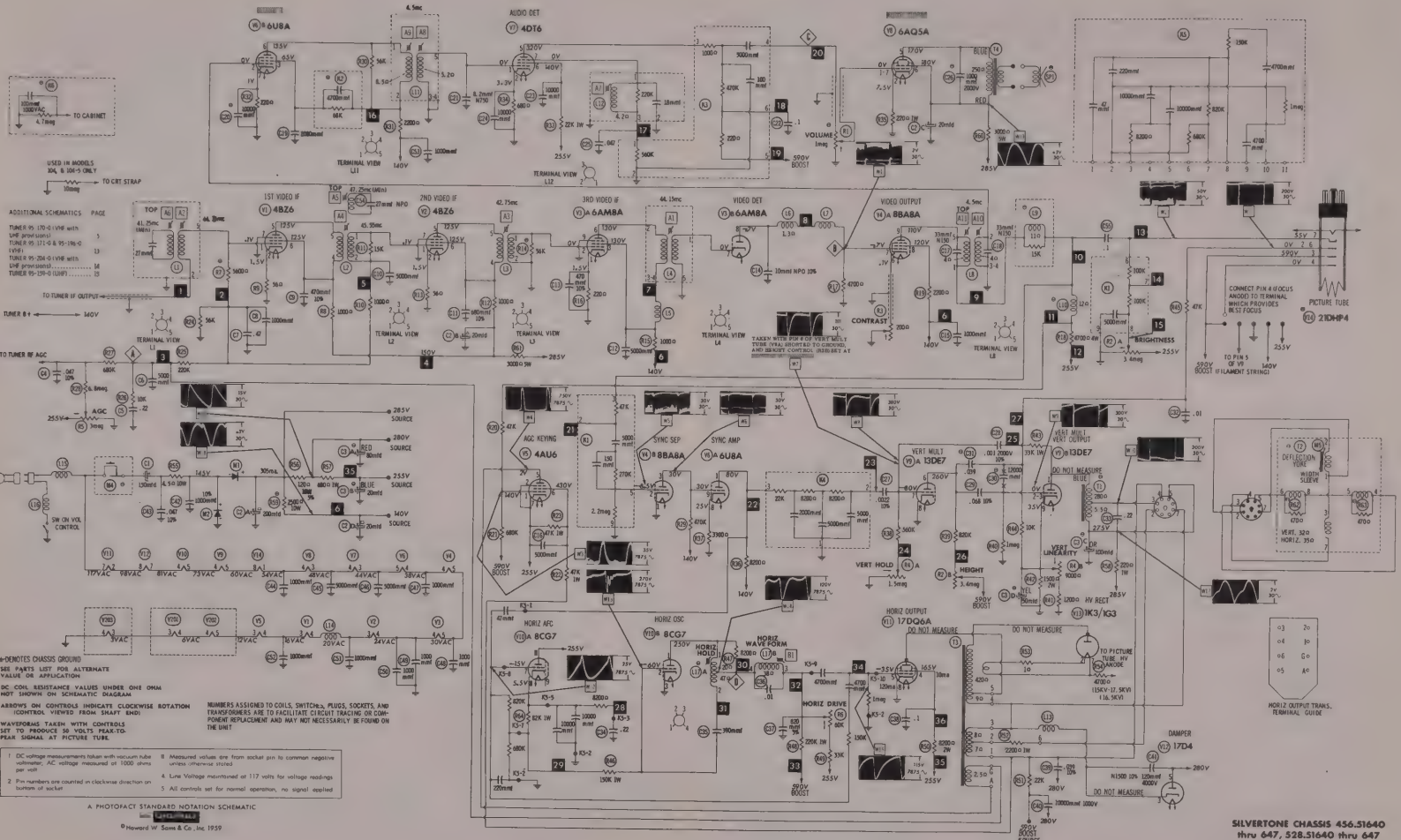
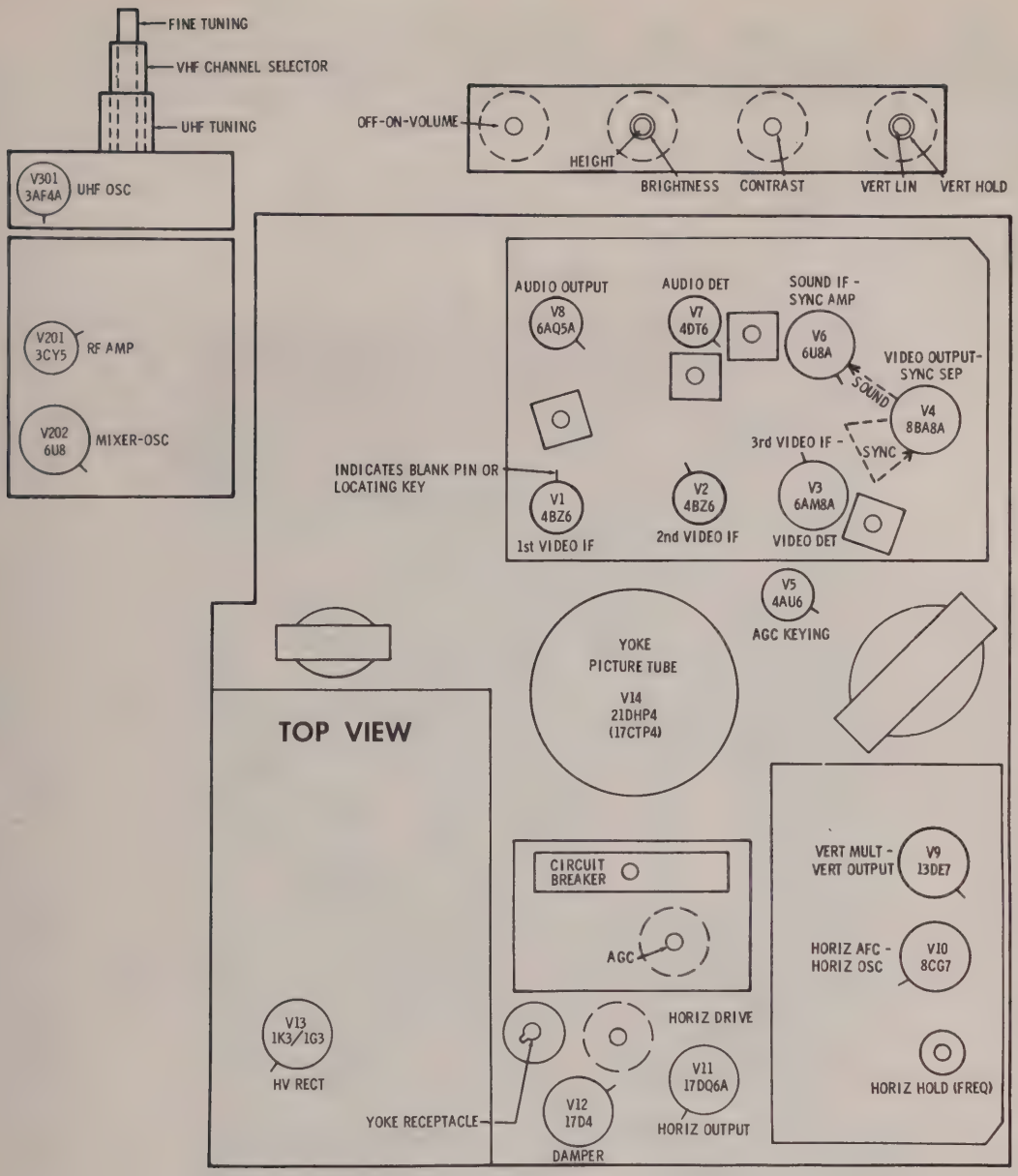
SILVERTONE CHASSIS 456.51640 thru 647, 528.51640 thru 647

SILVERTONE CHASSIS 456.51640 thru 647, 528.51640 thru 647

SET 459 FOLDER 2


SILVERTONE CHASSIS 456.51640 thru 647, 528.51640 thru 647
SILVERTONE CHASSIS 456.51640 thru 647, 528.51640 thru 647
TO CABINET
TO CRT STRAP
TO TUNER IF OUTPUT
TO TUNER RF AGC
TERMINAL VIEW L1
TERMINAL VIEW L2
TERMINAL VIEW L3
TERMINAL VIEW L4
TERMINAL VIEW L8
TERMINAL VIEW L12
CONTRAST
VOLUME
BRIGHTNESS
HEIGHT
VERT HOLD
VERT LINEARITY
HORIZ DRIVE
HORIZ HOLD
HORIZ WAVE FORM
PICTURE TUBE
21DHP4
DAMPER
AGC
SYNC SEP
SYNC AMP
AGC KEYING
HORIZ AFC
HORIZ OSC
VERT MULT
VERT OUTPUT
HORIZ OUTPUT
DO NOT MEASURE
TO PICTURE TUBE HV ANODE
HORIZ OUTPUT TRANS. TERMINAL GUIDE
DEFLECTION YOKE
WIDTH SLEEVE
SW ON VOL CONTROL
DENOTES CHASSIS GROUND
SEE PARTS LIST FOR ALTERNATE VALUE OR APPLICATION
DC COIL RESISTANCE VALUES UNDER ONE OHM NOT SHOWN ON SCHEMATIC DIAGRAM
ARROWS ON CONTROLS INDICATE CLOCKWISE ROTATION (CONTROL VIEWED FROM SHAFT END)
WAVEFORMS TAKEN WITH CONTROLS SET TO PRODUCE 50 VOLTS PEAK-TO-PEAK SIGNAL AT PICTURE TUBE.
NUMBERS ASSIGNED TO COILS, SWITCHES, PLUGS, SOCKETS, AND TRANSFORMERS ARE TO FACILITATE CIRCUIT TRACING OR COMPONENT REPLACEMENT AND MAY NOT NECESSARILY BE FOUND ON THE UNIT
1 DC voltage measurements taken with vacuum tube voltmeter; AC voltage measured at 1000 ohms per volt
2 Pin numbers are counted in clockwise direction on bottom of socket
3 Measured values are from socket pin to common negative unless otherwise stated
4 Line Voltage maintained at 117 volts for voltage readings
5 All controls set for normal operation, no signal applied
A PHOTOFACT STANDARD NOTATION SCHEMATIC
Howard W. Sams & Co., Inc. 1959

TUBE PLACEMENT CHART



TUBE FAILURE CHECK CHART

The following chart lists tubes whose failures are most likely to produce indicated symptoms. Refer to tube placement chart for location and type of tube.

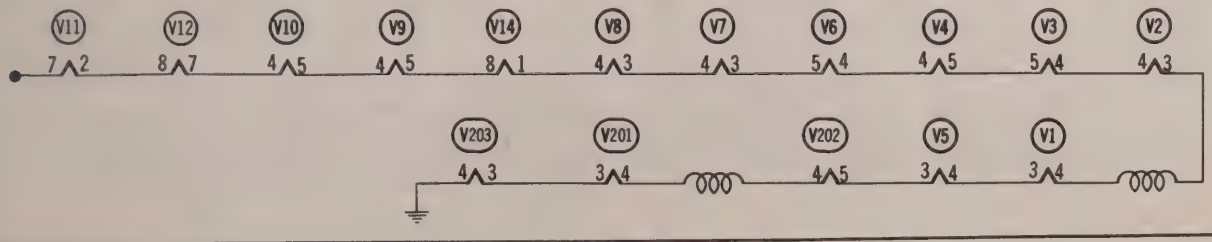
POWER SUPPLY FAILURE
No raster, no sound Circuit Breaker, Rectifiers (B+)

SWEEP FAILURE
No raster, has sound V10, V11, V12, V13, V14, Rectifiers (B+)
No vertical deflection V9
Poor vert. linearity or foldover V9
Poor horiz. linearity or foldover V10, V11, V12
Narrow picture V10, V11, V12, Rectifiers (B+)
Vert. off freq. V9
Horiz. off freq. V10

LOSS OF PICTURE OR SOUND
No pic, no sound, has raster V1, V2, V3, V4
No pic, no sound, has snow V201, V202, V1
No pic, has sound, has raster V4, V14
Has pic, no sound V6, V7, V8
Overloaded picture V5

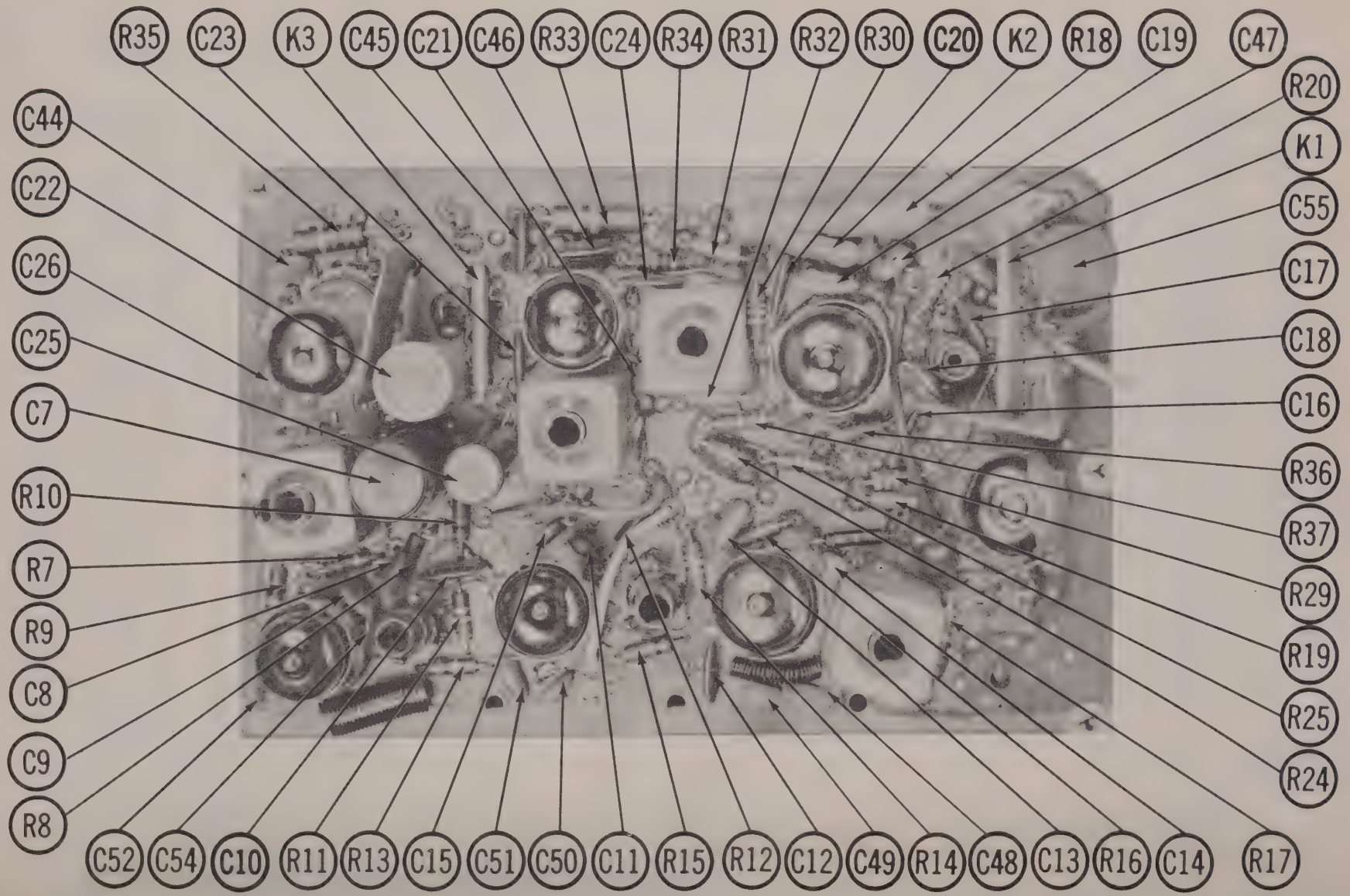
SYNC FAILURE
No vert. sync V9
No horiz. sync V10
No vert. or horiz. sync V4, V6

This receiver employs tubes used in a series filament network, an open filament in any tube will cause the set to be inoperative. (See circuit below.)

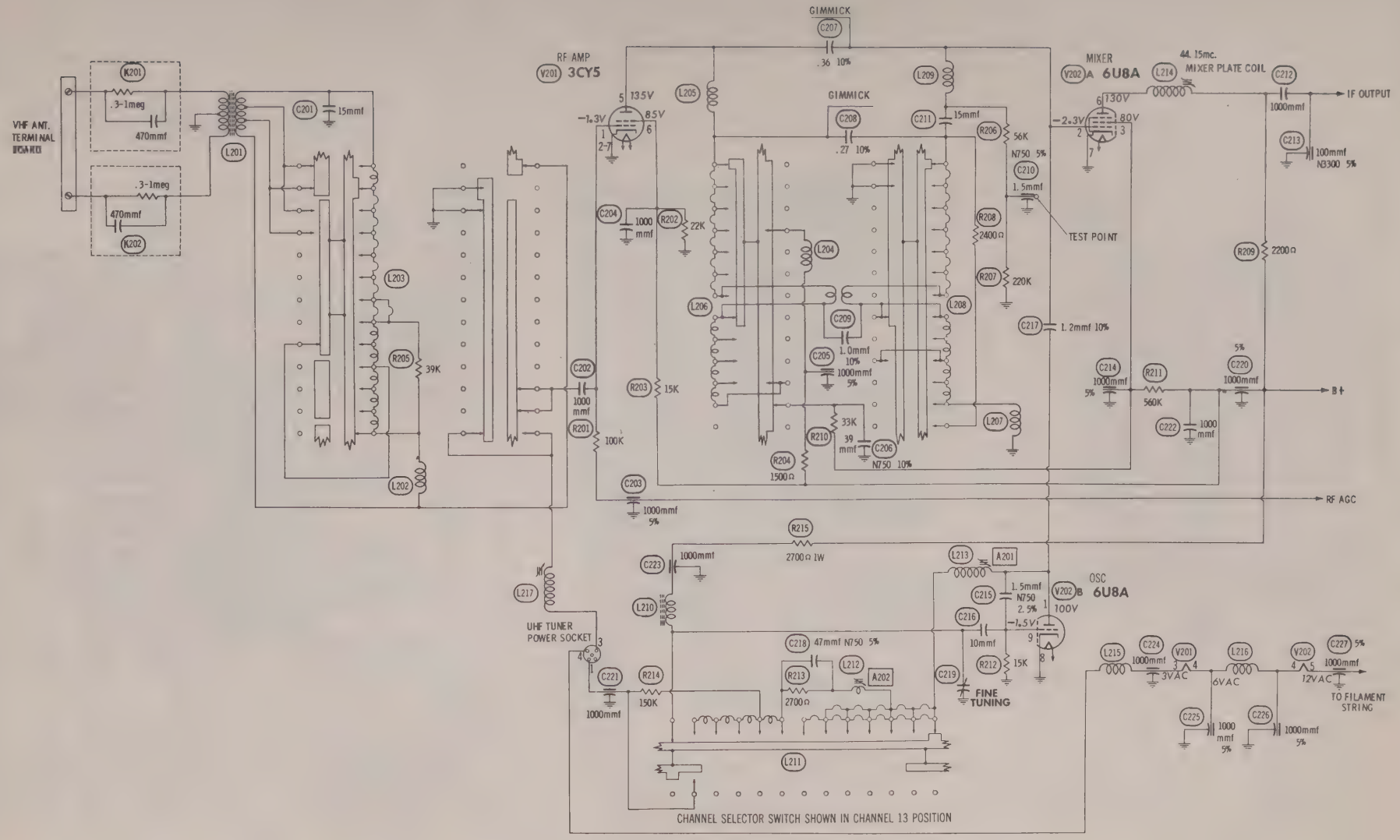


SILVERTONE CHASSIS 456.51640 thru 647, 528.51640 thru 647

FOLDER 2



MAIN PRINTED BOARD



A PHOTOFACT STANDARD NOTATION SCHEMATIC

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VHF TUNER with UHF provisions 95-176-0

SILVERTONE CHASSIS 456.51640 thru 647, 528.51640 thru 647

TUNER PARTS LIST AND DESCRIPTIONS

95-170-0

TUBES (GENERAL ELECTRIC, SYLVANIA)

ITEM No.	USE	TYPE	NOTES
V201	RF Amp.	3CY5	
V202	Mixer-Osc.	6U8A	

ITEM No.	USE	TYPE	NOTES
V203	UHF Osc.	3AF4A	

FIXED CAPACITORS

Capacity values given in the rating column are in mfd. for Paper Capacitors, and in mmfd. for Mica and Ceramic Capacitors.

ITEM No.	RATING			REPLACEMENT DATA						NOTES
	CAP.	VOLT	TOL	SILVERTONE PART No.	AEROVOX PART No.	CENTRALAB PART No.	CORNELL-DUBILIER PART No.	MALLORY PART No.	SPRAGUE PART No.	
C201	15			222-150	NPO-DI 15	DTZ-15	C10Q15C	CNO-415	5GA-Q15	
C202	1000			2033-23	BPD-001	DD-102	BYA10D1M	B-210	5HK-D1	
C203	1000		5%	244-1	EF-001	MFT-1000			503C-D1	
C204	1000			2033-23	BPD-001	DD-102	BYA10D1M	B-210	5HK-D1	
C205	1000		5%	244-1	EF-001	MFT-1000			503C-D1	
C206	39		N750 5%	233-390					5TCU-Q39S 5%*	
C207	.36		10%	2101-368						
C208	.27		10%	2101-278						
C209	1.0		10%	2101-109	NPO-SI 1.0	TCZ-1		CNO-510	5TCCB-V1S 10% *	
C210	1.5		N750 5%	259-159						
C211	15			222-150	NPO-DI 15	DTZ-15	C10Q150	CNO-415	5GA-Q15	
C212	1000			2033-23	BPD-001	DD-102	BYA10D1M	B-210	5HK-D1	
C213	100		N3300 5%	262-101						
C214	1000		5%	244-1	EF-001	MFT-1000			503C-D1	
C 215	1.5		N750 2.5%	170-159		TCZ-1R5				
C216	10			164-100	NPO-DI 10	DD-100	C10Q1C	CNO-410	5GA-Q1	
C217	1.2		10%	2101-129					5TCCB-V12S 10%*	
C218	47		N750 5%	233-470	N750-DI 47	DTZ-47		CN7-447	5TCU-Q47S 5% *	
C219				5322-505						
C220	1000		5%	244-1	EF-001	MFT-1000			503C-D1	
C221	1000		5%	244-1	EF-001	MFT-1000			503C-D1	
C222	1000			2033-23	BPD-001	DD-102	BYA10D1M	B-210	5HK-D1	
C223	1000		5%	244-1	EF-001	MFT-1000			503C-D1	
C224	1000		5%	244-1	EF-001	MFT-1000			503C-D1	
C225	1000		5%	244-1	EF-001	MFT-1000			503C-D1	
C226	1000		5%	244-1	EF-001	MFT-1000			503C-D1	
C227	1000		5%	244-1	EF-001	MFT-1000			503C-D1	
C228										
C229										
C230	1000			2033-23	BPD-001	DD-102	BYA10D1M	B-210	5HK-D1	
C231	18					DD-180	C10Q18C	CNO-418	5TCU-Q18S *	①
C232	.91		10%	2101-918						
C233				1620-9						
C234	1.5		N470 ±.25mmf							②
C235				5180-2						
C236	1000			206-102	BPD-001	DD-102	BYA10D1M	B-210	5HK-D1	
C237	1000			244-1	EF-001	MFT-1000			503C-D1	
C238	15			138-5	NPO-DI 15	DTZ-15	C10Q15C	CNO-415	5HK-D1	
C239	1000		5%	244-1	EF-001	MFT-1000			503C-D1	

① Some versions may use 40mmf in this application (Part #221-400).
② Not used in some versions.
* Not normally in distributors stock. Available through distributor on order to manufacturer.

RESISTORS

All wattages 1/2 watt, or less, unless otherwise listed.

ITEM No.	RATING		SILVERTONE PART No.	NOTES
	OHMS	WATT		
R201	100K		106-104	
R202	22K		106-223	
R203	15K		106-153	
R204	1500Ω		106-152	
R205	39K		106-393	
R206	56K		106-563	
R207	220K		106-224	
R208	2400Ω		106-242	
R209	2200Ω		106-222	
R210	33K		106-333	

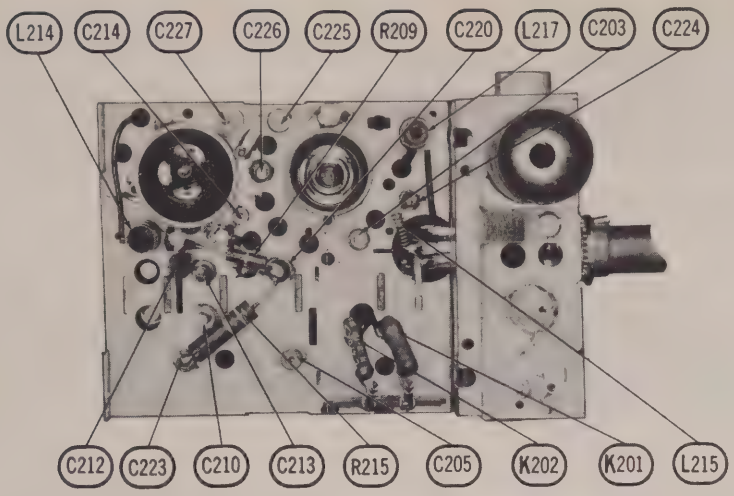
ITEM No.	RATING		SILVERTONE PART No.	NOTES
	OHMS	WATT		
R211	560K		106-564	
R212	15K		106-153	
R213	2700Ω		106-272	
R214	150K		106-154	
R215	2700Ω	1	107-272	
R216	820K		110-824	
R217	150Ω		106-151	
R218	6800Ω		106-682	
R219	1000Ω		106-102	

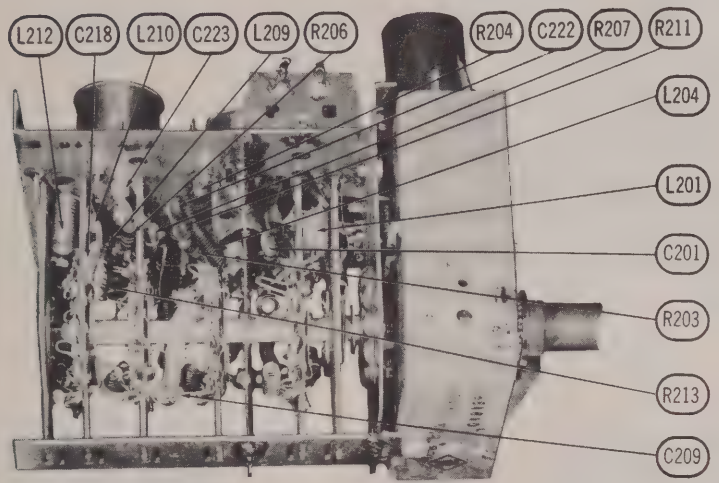
COILS (RF-IF)

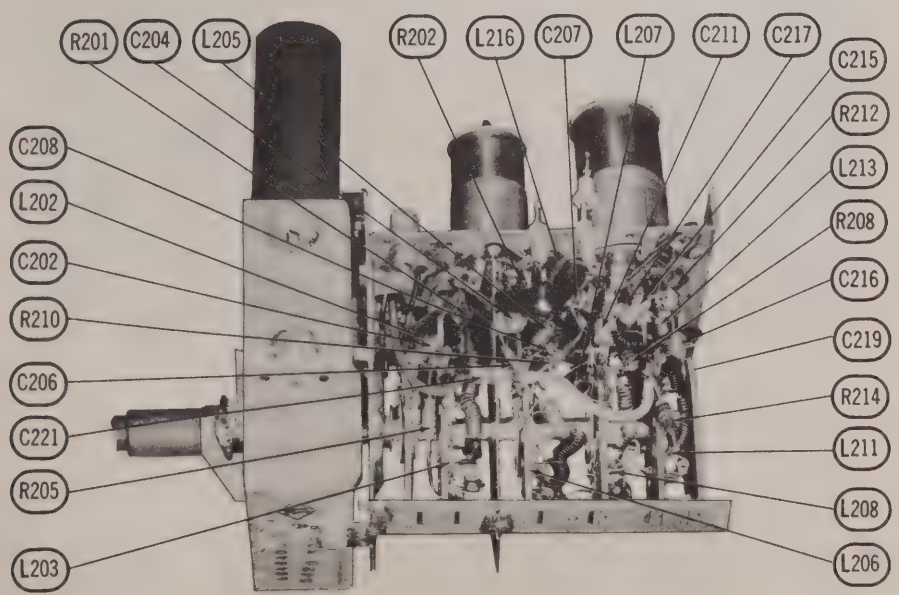
ITEM No.	USE	SILVERTONE PART No.	NOTES
L201	VHF Ant. Trans.	2309-4	
L202	RF Choke	300-3	
L203	Ant. Coils	2876-501	Channel 2-13, Includes wafer assy.
L204	RF Choke	301-25	
L205	RF Choke	301-8	
L206	RF Coils	2877-501	Channel 2-13, Includes wafer assy.
L207	RF Choke	301-25	
L208	Mixer Grid Coils	2878-501	Channel 2-13, Includes wafer assy.
L209	RF Choke	301-5	
L210	RF Choke	1894-9	

ITEM No.	USE	SILVERTONE PART No.	NOTES
L211	Osc. Coils	2879-501	Channel 2-13, Includes wafer assy.
L212	Osc. Tuning	5381-15	
L213	Osc. Tuning	5381-1	
L214	Mixer Plate	5359-5	
L215	Fil. Choke	301-10	
L216	Fil. Choke	301-10	
L217	UHF IF Output	5251-12	
L218	Fil. Choke	1785-70	
L219	Fil. Choke	1785-70	
L220	Cathode Choke	1911-12	
L221	RF Choke	1785-9	
L222	RF Choke	1785-13	
L223	RF Choke	1785-13	
L224	RF Choke	301-6	

continued PAGE 15







UHF-VHF TUNER 95-170-0

SET 459 FOLDER 2

ALIGNMENT INSTRUCTIONS

PRE-ALIGNMENT INSTRUCTIONS

Use an ISOLATION TRANSFORMER TO PROTECT the Test Equipment.
The High Voltage lead should be securely taped and kept away from the chassis.
Allow a 20 minute warm-up period for the receiver and test equipment.
Suggested Alignment Tools: GENERAL CEMENT #8606, 8606L, 8282, 9295
WALSCO #2526, 2543, 2544, 2545

VIDEO IF ALIGNMENT

Short the antenna terminals together, but not to chassis.
Connect the negative lead of a 3 volt bias supply to point Ⓐ. Positve to chassis.
Detune Mixer Plate Coil by turning core fully counterclockwise.
Detune A2, A4, A5 and A6 by presetting for maximum core separation.

	DUMMY ANTENNA	SIGNAL GENERATOR COUPLING	SIGNAL GENERATOR FREQUENCY	CHANNEL	CONNECT VTVM	ADJUST	REMARKS
1.	Direct	Place a thin insulated metal strip between the Mixer-Osc. tube (V202), and tube shield. Connect the high side of sweep generator to the metal strip. Low side to chassis.	44.15MC (Unmod)	Any non-interfering channel	DC probe thru 10K to point Ⓑ. Common to chassis. (Across Video Det. load)	A1, A2, & Mixer Plate Coil	Adjust for maximum deflection.
2.	"	"	42.75MC	"	"	A3	"
3.	"	"	45.5MC	"	"	A4	"
4.	"	"	47.25MC	"	"	A5	Adjust for MINIMUM deflection. Repeat steps 3 and 4.
5.	"	"	41.25MC	"	"	A6	Adjust for MINIMUM deflection.

OVERALL VIDEO IF RESPONSE CHECK

Attenuate sweep generator output to maintain not more than 2 volts peak to peak on the scope. (-3 volts DC at point Ⓑ.)
If a separate marker generator is used, couple loosely to the sweep cable.
Connect the synchronized sweep voltage from the sweep generator to the horizontal input of the oscilloscope for horizontal deflection.

	DUMMY ANTENNA	SWEEP GENERATOR COUPLING	SWEEP GENERATOR FREQUENCY	MARKER GENERATOR FREQUENCY	CHANNEL	CONNECT SCOPE	ADJUST	REMARKS
6.	Direct	Place a thin insulated metal strip between the Mixer-Osc. tube (V202), and tube shield. Connect the high side of sweep generator to the metal strip. Low side to chassis.	44.15MC (10MC Swp)	41.25MC 42.5MC 43.5MC 44.15MC 45.0MC 45.75MC 47.25MC	Any non-interfering channel	Vert. Amp. thru 10K to point Ⓑ. Low side to chassis. (Across Video Det. load)		Check for response similar to Fig. 1. Retouch Mixer Plate Coil if necessary to place 45.75MC marker at 50%. A2 may be retouched for correct tilt.

SOUND IF ALIGNMENT

	DUMMY ANTENNA	SIGNAL GENERATOR COUPLING	SIGNAL GENERATOR FREQUENCY	CHANNEL	CONNECT VTVM	ADJUST	REMARKS
7.	.001mfd	High side to point Ⓑ. Low side to chassis. Use high output.	4.5MC (400∿ FM 15KC Swp)	Any non-interfering channel	AC probe to point Ⓒ. Common to chassis.	A7, A8	Adjust A7 for maximum deflection. (If two peaks occur, use highest peak). Adjust A8 for maximum deflection. Retouch A7.
8.	"	"	"	"	"	A9, A10, A11	Reduce generator output to 500 microvolts. Adjust A9, A10 and A11 for maximum deflection. Keep reducing generator output to keep VTVM reading from exceeding 4.5 volts AC.

4.5MC TRAP ALIGNMENT

Tune in a strong TV signal and set Contrast at maximum. Adjust the Fine Tuning until a beat pattern is visible. Adjust A11 for MINIMUM beat interference.

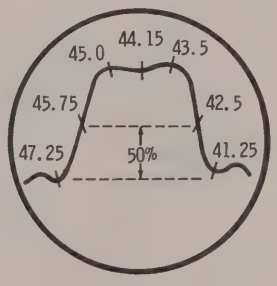
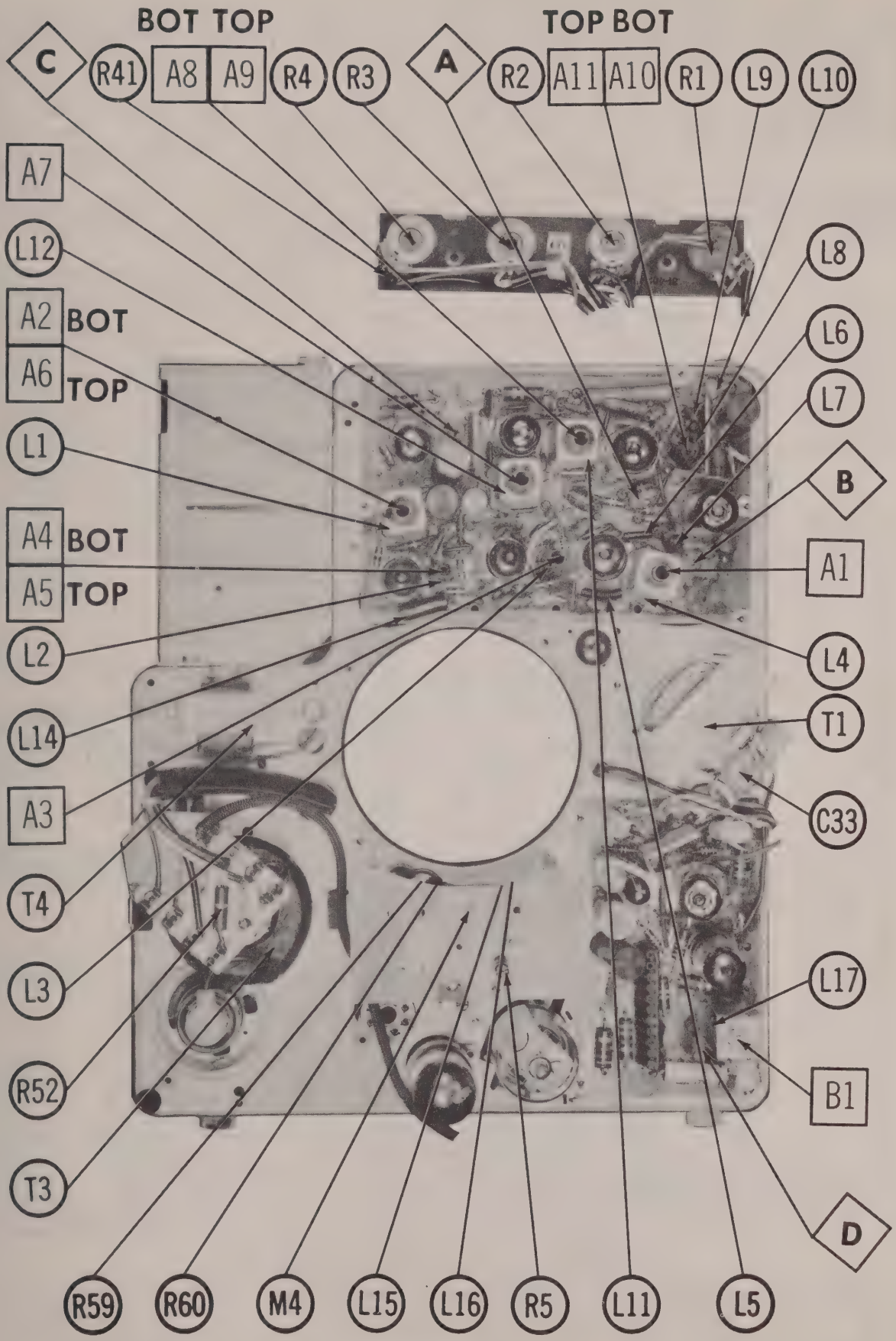


FIG. 1



CHASSIS TOP VIEW

SET 459 FOLDER 2

SILVERTONE CHASSIS 456.51640 thru 647, 528.51640 thru 647

FOLDER 2

PARTS LIST AND DESCRIPTIONS

TUBES

ITEM No.	USE	CBS / GENERAL ELECTRIC / RAYTHEON / SYLVANIA TYPE
V1	1st Video IF Amp.	4BZ6
V2	2nd Video IF Amp.	4BZ6
V3	3rd Video IF Amp. - Video Det	6AM8A
V4	Video Output-Sync Sep	6BA8A
V5	AGC Keying	6AU8
V6	Sound IF Amp.-Sync Amp.	6U8A
V7	Audio Det.	6DT6
V8	Audio Output	6AQ8A
V9	Vert Mult.-Vert. Output	12DE7
V10	Horiz AFC-Horiz. Osc.	6CG7
V11	Horiz Output	17DQ6A
V12	Damper	17D4
V13	HV Rect.	1K3/1G3

PICTURE TUBE

ITEM No.	REPLACEMENT DATA: SILVERTONE PART No.	GENERAL ELECTRIC PART No.	RCA PART No.	RAYTHEON PART No.	SYLVANIA PART No.	NOTES
V14	21DHP4 17CTP4				21DHP4 ① 17CTP4 ①	① "Silver Screen 85"

ELECTROLYTIC CAPACITORS

ITEM No.	RATING: CAP.	VOLT.	REPLACEMENT DATA: SILVERTONE PART No.	AEROVOX PART No.	CORNELL-DUBILIER PART No.	MALLORY PART No.	PYRAMID PART No.	SPRAGUE PART No.	NOTES
C1	150	150	18-73-5	PRI-100	BR15015	TC495	TO-150-150	TVA-1422	
C2A	▲30	330	18-69-5	AFH4-03-90	D0026	FP419.54	TMQ-118	TVL-4590	
B	▲30	300							
C	30	300							
D	▲30	300							
C3A	30	300	18-79-5	PR4-250	D0474 BR2035			TVA5-45805 * ①	
B	30	300							
C	100	300							
D	50	50							

① Alternate Part #18-91-5. * Not normally in distributor's stock. Available thru distributor on order to manufacturer.

FIXED CAPACITORS

Capacity values given in the rating column are in mfd. for Paper Capacitors, and in mmfd. for Mica and Ceramic Capacitors.

ITEM No.	RATING: CAP.	VOLT	TOL.	REPLACEMENT DATA: SILVERTONE PART No.	AEROVOX PART No.	CENTRALAB PART No.	CORNELL-DUBILIER PART No.	MALLORY PART No.	SPRAGUE PART No.	NOTES
C4	.047	300	10%	16-47333	V84C2347-10%		PM2847	GTM-2147	2TM-S47	
C5	33	300		15-23433	P2S3N-23		CUB2F33	GEM-3022	2TM-P33	
C6	5000			15-50317	BPD-005	DD-502	BYA10D5	B-350	5HK-D50	
C7	.47	100		20-117-1	P2S1N-47		BC2F47	ACE615	2SE-P47	
C8	1000			15-10217	BPD-001	DD-102	BYA10D1	B-210	5HK-D10	
C9	470		10%	20-46-0	DI-470	DD-471	32R5T47	JL-347	1DT5-T47	
C10	5000			15-50317	BPD-005	DD-502	BYA10D5	B-350	5HK-D50	
C11	680		10%	20-116-0	DI-680	DD-681	1R5T68	JL-368	1DT5-T68	
C12	5000			15-50217	BPD-005	DD-502	BYA10D5	B-350	5HK-D50	
C13	470		10%	20-56-0	DI-470	DD-471	32R5T47	JL-347	1DT5-T47	
C14	10		NPO 10%	20-14-0	NPO-E 10	TCZ-10	CNQ1C	CNO-410	10TCC-Q10	
C15	1000			15-10217	BPD-001	DD-102	BYA10D1	B-210	5HK-D10	
C16	5000			15-50217	BPD-005	DD-502	BYA10D5	B-350	5HK-D50	
C17	33		N150						10TCP-Q33	
C18	33		N150						10TCP-Q33	
C19	2000			20-59-0	BPD-002	DD-202	BYA10D2	B-220	5HK-D20	
C20	100000			20-56-0	BPD-01	DD-103	BYA10D5	B-110	5HK-S10	①
C21	8.2		N750	30-115-0			C10V82U		10TCP-Q33	
C22	.1	600		20-124-1	P6S1N-1	DF-104	BC2F1J	ACE601	6SE-P10	
C23	10000			20-96-0	BPD-01	DD-103	BYA10D1	B-110	5HK-S10	
C24	10000			20-56-0	BPD-01	DD-103	BYA10D1	B-110	5HK-S10	
C25	.047	400		20-44-1	P4S1N-047	DF-503	BC5S47J	GEM-4147	4SE-P47	
C26	1000	3000		20-76-0	HVD-10-100(	DD30-102	HVB20D1	2HV-B10	30GA-D10	③
C27	.0033	600	10%	20-119-1	V84C4D33-10%		PM6D33	GTM-433	6TM-D33	
C28	.001	3000	10%	20-135-0						
C29	.068	400	10%	20-130-0	V84C4S68-10%		PM4S68	GTM-4168	4TM-S68	
C30	12000			30-206-0	BPD-015	DD-183	BYA10S15	B-115	5HK-S15	②
C31	.039	400			P6S4CN-039			GEM-464	4TM-S4	③
C32	.01	200		20-123-1	P2S1N-01	D6-103	BC2S1J	ACE611	2SE-S10	
C33	.33	200		15-23433	P2S8N-33		CUB2F33	GEM-3022	2TM-P33	
C34	.22	300		20-43-1	P2S1N-22		BC2F22J	ACE623	2SE-P23	
C35	330				1468-00038M	D6-331	5W5T39	MC363	1FM-339	
C36	.01	600		20-18-1	P6S8N-01	D6-103	CU6S6	GEM-611	6TM-S1	
C37	680		5%	30-13-3	1468-00068J		1R5T68		MS-363	
C38	.1	400		20-43-1	P4S1N-1	DF-104	BC6F1J	ACE601	4SE-P10	
C39	.039	600	10%	30-123-1	P6S4CM-039		PM6S4	GTM-414	6TM-S4	
C40	10000	1000		20-97-1	BPD-01	DD-103	BYA10S1	B-110	5HK-S10	
C41	120	6000	N1500 10%	15-123-15						
C42	1000		10%	20-75-0	DI-1000	DD-103	1R5DI	JL-310	10TS-D10	
C43	.047	600	10%	15-47353	V84C5S47-10%		PM5S47	GTM-5147	5TM-S47	
C44	1000			15-10217	BPD-001	DD-103	BYA10D1	B-210	5HK-D10	
C45	5000			15-50217	BPD-005	DD-502	BYA10D5	B-350	5HK-D50	
C46	5000			15-50317	BPD-005	DD-502	BYA10D5	B-350	5HK-D50	
C47	1000			20-56-0	BPD-001	DD-103	BYA10D1	B-210	5HK-D10	
C48	1000			15-10217	BPD-001	DD-103	BYA10D1	B-210	5HK-D10	
C49	1000			15-10217	BPD-001	DD-102	BYA10D1	B-210	5HK-D10	
C50	1000			15-10217	BPD-001	DD-103	BYA10D1	B-210	5HK-D10	
C51	1000			15-10217	BPD-001	DD-103	BYA10D1	B-210	5HK-D10	
C52	1000			15-10217	BPD-001	DD-102	BYA10D1	B-210	5HK-D10	
C53	1000			15-10217	BPD-001	DD-103	BYA10D1	B-210	5HK-D10	
C54	1000			20-56-0	BPD-001	DD-103	BYA10D1	B-210	5HK-D10	
C55	1000									
C56	.1	400	NPO	20-43-1	P4S1N-1	DF-104	BC4F1J	ACE601	4SE-P10	

① May be part of a component combination (Part #53-31-3).
② Ch. 456/528.51644, 645, 646, 647 use 5000mmfd @ 1000V in this application (Part #20-206-0).
③ Not used in Ch. 456/528.51640, 641.
④ Ch. 456/528.51640, 641 use .047mfd 10% @ 400V in this application (Part #30-121-1).

CONTROLS

ITEM No.	RATING: RESIST. ANCE	WATTS	REPLACEMENT DATA: SILVERTONE PART No.	CENTRALAB PART No.	CLAROSTAT PART No.	IRC PART No.	MALLORY PART No.	INSTALLATION NOTES
R1A	1meg	½	34-314-0	B-70-8	A47-1meg-Z	Q13-137	U53	Volume, Note 1
B	Shaft			Not Req.	K28-3	Not Req.	Not Req.	
C	Switch			Not Req.	SWZ-12	76-1	U3-28	
R2A	3.4meg	½	34-145-1					Brightness Height
B	3.4meg	½						

CONTROLS (cont)

ITEM No.	RATING: RESIST ANCE	WATTS	REPLACEMENT DATA: SILVERTONE PART No.	CENTRALAB PART No.	CLAROSTAT PART No.	IRC PART No.	MALLORY PART No.	INSTALLATION NOTES
R3A	200Ω	½	34-136-1	F1-0		●(G)-1102	FA 22L	Contrast
B	Shaft			Not Req.		C	C0687	
R4A	1.5meg	½	34-137-1	F1-94		■(G)-996	UH3963	Vert. Hold Vert. Linearity
B	900Ω	½		R2-25				
R5A	3meg	½	34-135-1	BX-84	B47-3meg-S	BU-160	PTA355L	AGC
B	Shaft			Not Req.	Not Req.	TM4	Not Req.	
R6A	40K	½	34-139-1	AB-35	A47-75K-S	BU-135	PTA54L	Horiz. Drive
B	Shaft			AK-19	RN-3	TM4	Not Req.	

Note 1. Alternate Part #24-322-0.
● "Concentrikit" Equivalent: K-8 Kit with Base Elements & Shafts: B11-138, P13-022 (Panel) B17-116, R15-005 (Rear) R-8 (Retainer)
▲ "STA-LOC" Equivalent: FA35L, RU4R, C0687, UH37.
▲ "Concentrikit Equivalent: K-8 Kit with Base Elements & Shafts, B11-101, P13-022 R-8(Retainer)

RESISTORS

All wattages 1/2 watt, or less, unless otherwise listed.

ITEM No.	RATING	REMARKS
R7	5600Ω	Note 1
R8	1000Ω	
R9	56Ω	
R10	1000Ω	
R11	15K	
R12	1000Ω	
R13	56Ω	
R14	56K	Note 2
R15	1000Ω	
R16	220Ω	
R17	4700Ω	
R18	4700Ω 4W	#65-5-1
R19	2200Ω	
R20	47K	
R21	680K	
R22	47K 1W	
R23	47K 1W	
R24	56K	
R25	220K	
R26	10K	

ITEM No.	RATING	REMARKS
R27	680K	
R28	6.8meg	
R29	470K	
R30	56K	
R31	2200Ω	
R32	220Ω	
R33	22K 1W	
R34	680Ω	
R35	220Ω 1W	
R36	8200Ω	
R37	3300Ω	
R38	560K	
R39	820K	
R40	1meg	
R41	12000Ω	
R42	1500Ω 2W	
R43	33K 1W	
R44	10K	
R45	47K	
R46	150K 1W	

ITEM No.	RATING	REMARKS
R47	8200Ω	
R48	220K 1W	
R49	33K	
R50	6200Ω 2W	
R51	22K	
R52	12000Ω 1W	
R53	1Ω	
R54	4700Ω	
R55	4.5Ω 10W	#61-115-0
R56	120Ω 5% 10W	#61-134-0
R57	680Ω 1W	
R58	220Ω 1W	
R59	2500Ω 10W	Note 3
R60	3000Ω 5W	
R61	3000Ω 5W	
R62	470Ω	Note 4
R63	470Ω	Note 4
R64	82K 1W	

Note 1. Ch. 456/528.51644, 645, 646, 647 use 4700Ω in this application.
Note 2. Ch. 456/528.51644, 645, 646, 647 use 10K in this application.
Note 3. Some versions may use 3200Ω 10W in this application (Part #61-153-0).
Note 4. Value may vary. Replace with original value.

COMPONENT COMBINATIONS

ITEM No.	USE	DESCRIPTION	SILVERTONE PART No.	REPLACEMENT DATA
K1	Brightness & Sync Coupling	150mmf, 5000mmf, 5000mmf, 47K, 100K, 100K, 270K, 2.2meg.	13-24-3	Sprague ST-16
K2	Sound IF Grid	4700mmf, 68K	①	Sprague PRC-6
K3	Audio Coupling	100mmf, 5000mmf, 1000Ω, 220Ω, 470K, 560K	13-25-3	Sprague HN-8
K4	Vert. Integrator	2000mmf, 5000mmf, 5000mmf, 8200Ω, 6200Ω, 22K	13-26-3	Aerovox PA-110 Centralab PC-100 Sprague V1,V2 Cornell-Dubilier 115T2M3
K5	Horiz. Circuit	47mmf, 220mmf, 4700mmf, 4700mmf, 10000mmf, 10000mmf, 8200Ω, 150K, 680K, 820K, 1meg	13-29-5	
K6	Chassis Isolation	1000mmf @ 1000VAC, 4.7meg	13-17-3 ②	

① Some versions may use individual components in this application.
② Models 18, 18-5 only. Models 104, 104-5 use 10meg to picture tube strap.

COILS (RF-IF)

ITEM No.	USE	REPLACEMENT DATA: SILVERTONE PART No.	Gramer PART No.	Meisner PART No.	Merit PART No.	Miller PART No.	Ram PART No.	NOTES
L1A	1st Video IF	10-38-3						
B	41.25MC Trap							
L2A	2nd Video IF	10-21-3						
B	47.25MC Trap							
L3	3rd Video IF	10-22-3						
L4	4th Video IF	10-24-3						
L5	RF Choke	10-151-1						
L6	Resonant Choke	10-66-1						13uh
L7	Series Peaking Coil	10-54-1			TV-193	6130		60uh
L8A	Sound Take-Off	10-155-1						
B	4.5MC Trap							
L9	Series Peaking Coil	10-56-1	19-3250 *	19-3250 *	TV-198 *	6130 *	VP-6 *	270uh ①
L10	Shunt Peaking Coil	10-98-1	19-3250	19-3250	TV-198	6130	VP-6	270uh ①
L11	2nd Sound IF	10-23-3						
L12	Quadrature Coil	10-17-5						
L13	RF Choke	10-151-1						
L14	Fil. Choke	10-122-1	19-1002	19-1002	BC-563	4606		2.2uh
L15	Line Choke	10-149-1	19-3036	19-3036	TV-180	6176	VP-1	40uh
L16	Line Choke	10-149-1	19-3036	19-3036	TV-180	6176	VP-1	40uh

① Wound on 15K resistor. Some versions may use 270uh without resistor (Part #60-150-1). ② Alternate Part #10-147-1. * Parallel with 15K resistor.

TRANSFORMER (HORIZ. OSC.)

ITEM No.	DC RES. PRI.	DC RES. SEC.	REPLACEMENT DATA: SILVERTONE PART No.	Halldorson PART No.	Merit PART No.	Miller PART No.	Ram PART No.	Thordarson PART No.	NOTES
L17A	67Ω		10-11-5 ①						Horiz. Osc. tapped @ 6½Ω
B	38Ω								Horiz. Waveform
									① Alt. Part #10-28-5.

TRANSFORMERS (SWEEP CIRCUITS)

ITEM No.	USE	REPLACEMENT DATA: SILVERTONE PART No.	Halldorson PART No.	Merit PART No.	Ram PART No.	Rogers PART No.	Stancor PART No.	Thordarson PART No.	Triad PART No.
T1	Vert. Output	B90-3-2C	26S15 ①	A-2823 ②	V308 ① ②	VC35 ①	A-8547 ①	26S15 ①	A-11AX ④
	Alt Vert Outputs	80-3-3	26S15 ③	A-2832 ③	V318 ① ③	VC25 ③④	A-8547 ③	26S15 ③	A-11AX ⑤
T2	Yoke-Horiz. (21MM) (110°)-Vert. (24MM)	80-9-4 ⑤	Y-53 ⑤ ⑥					Y-53 ⑤⑥	Y-62 & NW-20 ⑦
	Alt. Yoke	80-10-4 ①							YC-110
	Rear Cover & Centering Device	21-404-0							
	Alt. Rear Cover & Centering Device	21-237-0							
	Alt Rear Cover & Centering Device	21-295-0							
	Yoke Clamp	23-116-3							
T3	Horiz. Output	80-8-3	FLY-137* ⑧ ⑨		X103 * ⑧ ⑨	HO-304 * ⑧ ⑨	FLY-137 * ⑧ ⑨	D-166 * ⑧	

① Drill new mounting hole(s).
② Connect as autoformer.
③ Cut and tape blanking lead.
④ Use 8-turn primary.
⑤ Use 11-turn primary.
⑥ Use 8-turn relin.
⑦ Includes rear cover, centering device, and yoke plug.
⑧ Use original rear cover and centering device. Remove capacitor from yoke terminals #2 and #7.
⑨ Use original yoke plug and connect same as original.
⑩ Use original mounting bracket and bolts.
* This part may be superceded by Parts Manufacturer's introduction of special unit for this application.

*HORIZONTAL OUTPUT TRANSFORMER CONNECTION DATA

Use Original Width Coil Unless Replacement Type Is Listed

ORIGINAL TERMINAL CONNECTIONS	Halldorson Replacement Connections	Merit Replacement Connections	Ram Replacement Connections	Rogers Replacement Connections	Stancor Replacement Connections	Thordarson Replacement Connections	Triad Replacement Connections
5	5		5	5	5	5	5
4	6		6	4	6	6	4
3	6		6	4	6	6	3
2	NC See Note ⑨		NC See Note ⑨	NC See Note ⑨	NC See Note ⑨	NC See Note ⑨	3
1	8		8	1	8	8	1
A	3		3	7	3	3	A
G	1		1	8	1	1	G
Special Notes →	⑩		⑩ 11	⑩	⑩	⑩	

⑨ Install new damping network consisting of approximately 100mmf and 1000Ω across Horizontal yoke terminals #2 and #1.
10 If AGC does not function properly, reverse connections to terminals #2 and #1.
11 Remove one turn from filament winding.

TRANSFORMER (AUDIO OUTPUT)

ITEM No.	IMPEDANCE PRI.	IMPEDANCE SEC.	REPLACEMENT DATA: SILVERTONE PART No.	Halldorson PART No.	Merit PART No.	Ram PART No.	Stancor PART No.	Thordarson PART No.	Triad PART No.	NOTES
T4	6000Ω	3-4Ω	80-81-1	24351	A-2930	AU-601	A-3877	24351	S-3X	

SPEAKER

ITEM No.	TYPE: SIZE	FIELD	V. C. IMP.	REPLACEMENT DATA: SILVERTONE PART No.	CLIAN PART No.	NOTES
SP1	5"	PM	3-4Ω	33-383-4 ①	5A1	① Models 18L, 18CH, 18-5L, 18-5CH
	3" x 5"	PM	3-4Ω	33-379-4 ②		② Models 104BL, TA, GY, 104-5BL, TA, GY

RECTIFIERS

ITEM No.	RATING: CURRENT (Measured)	REPLACEMENT DATA: SILVERTONE PART No.	FEDERAL PART No.	INTERNATIONAL PART No.	SARKES TARZIAN PART No.	SYLVANIA PART No.	NOTES
M1	.305A	86-1-3 ①	HA-504 ①	SD-500 ①	40K ①	SR-500 ①	① Silicon Type.
M2	.305A	86-1-3 ①	HA-504 ①	SD-500 ①	40K ①	SR-500 ①	

MISCELLANEOUS

ITEM No.	PART NAME	SILVERTONE PART No.	NOTES
M3	Tuner	95-170-0	UHF-VHF, Includes VHF Section (95-178-0) and UHF Section (95-159-0), Ch. 456/528.51641, 643, 645
	Tuner	95-203-0	UHF-VHF, Includes VHF Section (95-204-0) and UHF section (95-159-0), Ch. 456/528.51647
	Tuner	95-171-0	VHF Ch. 456/528.51640, 642, 644
	Tuner	95-196-0	VHF Ch. 456/528.51646
M4	Circuit Breaker	43-1-2	
	Circuit Breaker	43-3-3	Alternate part number
M5	Width Sleeve	63-1304	
	Magnet	27-70-2	Beam Alignment used with some tubes
	Printed Board	84-7276	IF, Sync. & Sound, Less Tubes, Ch. 456/528.51640, 641, 642, 643
	Printed Board	84-7275-1	IF, Sync. & Sound, Less Tubes, Ch. 456/528.51644, 645, 646, 647
	Printed Board	84-7531	Sweep, Less Tubes, Ch. 456/528.51640, 641
	Printed Board	84-7531-2	Sweep, Less Tubes, Ch. 456/528.51642, 643, 644, 645, 646, 647

SILVERTONE CHASSIS 456.51640 thru 647, 528.51640 thru 647

FOLDER 2

PARTS LIST AND DESCRIPTIONS (Continued)

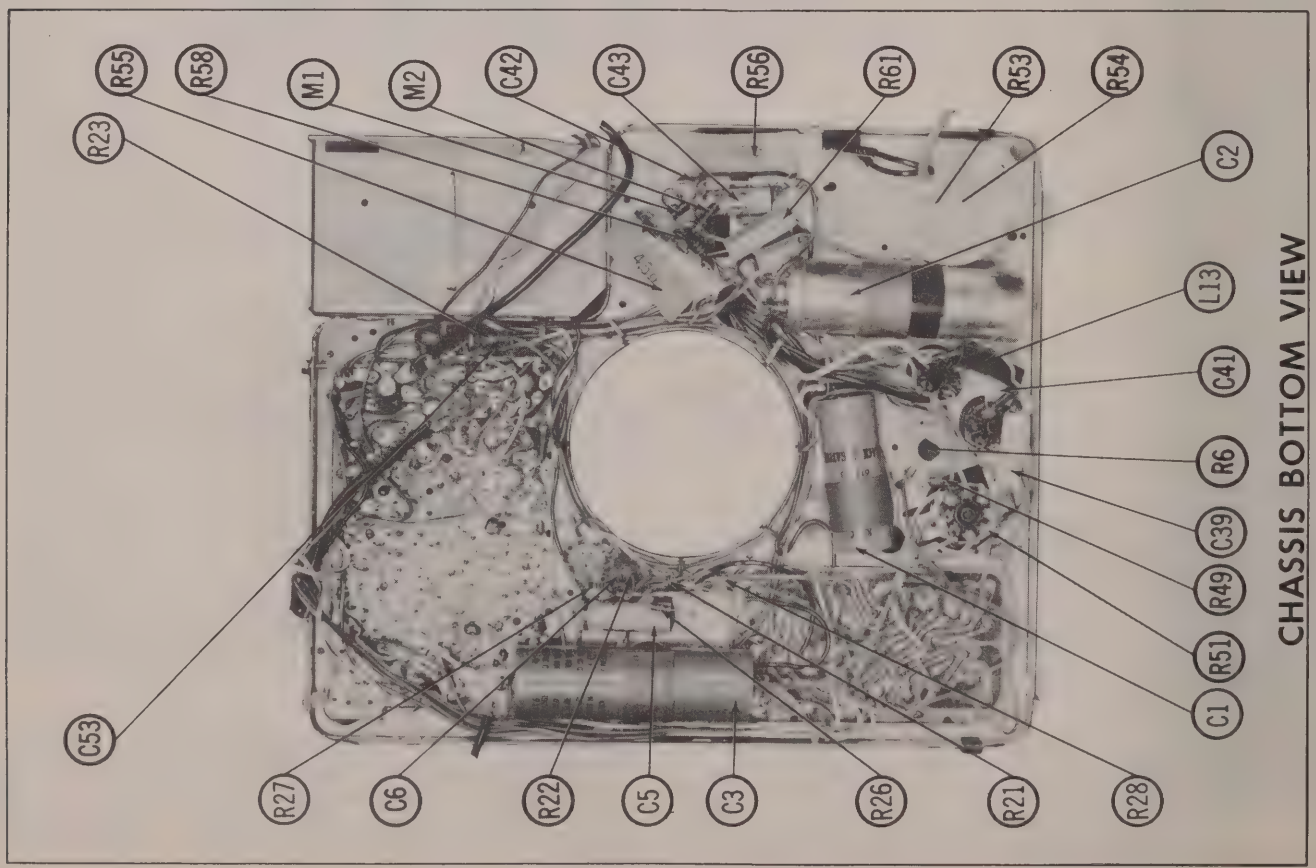
CABINETS & CABINET PARTS

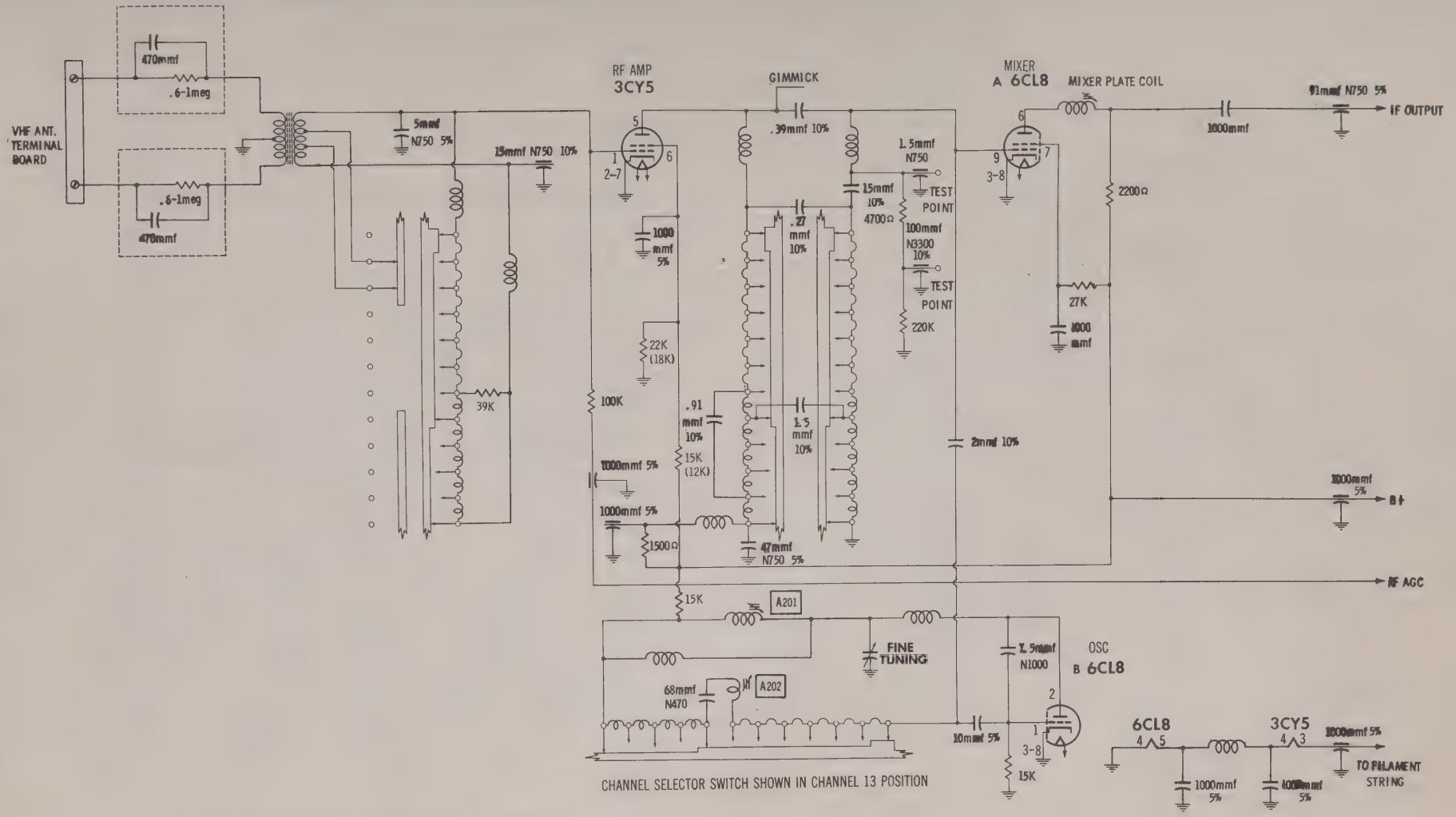
(When Ordering Cabinets & Cabinet Parts, Specify Model, Chassis & Color)

NAME	PART NO.	DESCRIPTION
Safety Glass	48-152-0	Models 104BL, 104TA, 140GY, 104-5BL, 104-5TA, 104-5GY
Safety Glass	48-144-0	Models 118L, 118CH, 118-5L, 118-5CH
Bezel	40-19-5	Models 104BL, 104TA, 104GY, 104-5BL, 104-5TA, 104-5GY
Bezel	40-39-5	Models 118L, 118CH, 118-5L, 118-5CH
Knob	52-1077-0	VHF Channel Selector, Models 104-5BL, TA, GY
Knob	52-1277-0	VHF Channel Selector, Models 118L, 118CH
Knob	52-1079-0	Channel Selector, Models 104BL, TA, GY
Knob	52-1276-0	Channel Selector, Models 118L, 118CH
Knob	52-1078-0	UHF Channel Selector, Models 104-5BL, TA, GY
Knob	52-1080-0	Fine Tuning, Models 140BL, TA, GY
Knob	52-1075-0	Fine Tuning, Models 104-5BL, TA, GY
Khob	52-868-0	Fine Tuning, VHF, Models 118-5L, 118-5CH
Knob	52-886-0	Fine Tuning, UHF, Models 118-5L, 118-5CH
Knob	52-1017-0	Fine Tuning, Models 118L, 118CH
Knob	52-1076-0	Dial, Models 104-5BL, TA, GY
Knob	52-1019-0	Dial, UHF, Models 118-5L, 118-5CH
Knob	52-1151-0	Off-On-Volume, Models 104BL, TA, GY,-5TA, -5GY, -5BL
Knob	52-1130-0	Off-On-Volume, Models 118L, 118CH, 118-5L, 118-5CH
Knob	52-1111-0	Brightness, Vert. Hold, Contrast, Models 104BL, TA, GY, 104-5BL, -5TA, -5GY
Knob	52-1129-0	Brightness, Vert. Hold, Contrast, Models 118L, 118CH, 118-5L, 118-5CH
Cabinet	42-153-0	Wraparound (Ice Blue), Models 104-BL, 104-5BL
Cabinet	42-151-0	Wraparound (Tangerine), Models 104TA, 104-5TA
Cabinet	42-152-0	Wraparound (Grey), Models 104GY, 104-5GY
Cabinet	42-129-0	Models 118CH, 118-5CH
Cabinet	42-130-0	Models 118L, 118-5L
Handle	49-369	Models 104BL, TA, GY, 104-5BL, TA, GY
Handle	49-479	Models 118CH, 118-5CH
Handle	49-480	Models 118L, 118-5L
Antenna	82-139-0	Models 104BL, TA, GY, 104-5BL, TA, GY
Antenna	82-138-0	May be used in some versions of Models 104BL, TA, GY, 104-5BL, TA, GY
Antenna	82-137-0	May be used in some versions of Models 104BL, TA, GY, 104-5BL, TA, GY
Antenna	82-158-0	Models 118L, 118CH, 118-5L, 118-5CH

WIRING DATA

High Voltage Lead	Use BELDEN No.	8869
Shielded Hook-up Wire	Use BELDEN No.	8885 (Single Conductor)
		8738 (Two Conductor)
General-use Unshielded Hook-up Wire	Use BELDEN No.	8530 (Solid) Available in Ten Colors
		8524 (Stranded) Available in Ten Colors
Power Cord (Interlock Type)	Use BELDEN No.	8874
300Ω Tuner Input Lead	Use BELDEN No.	8225
300Ω Antenna Lead-in	Use BELDEN No.	8230 or 8275
Antenna Rotor Cable	Use BELDEN No.	8464 (Flat) or 8484 (Round) - 4 Conductor
		8485 (Round) - 5 Conductor
		8488 (Round) - 8 Conductor





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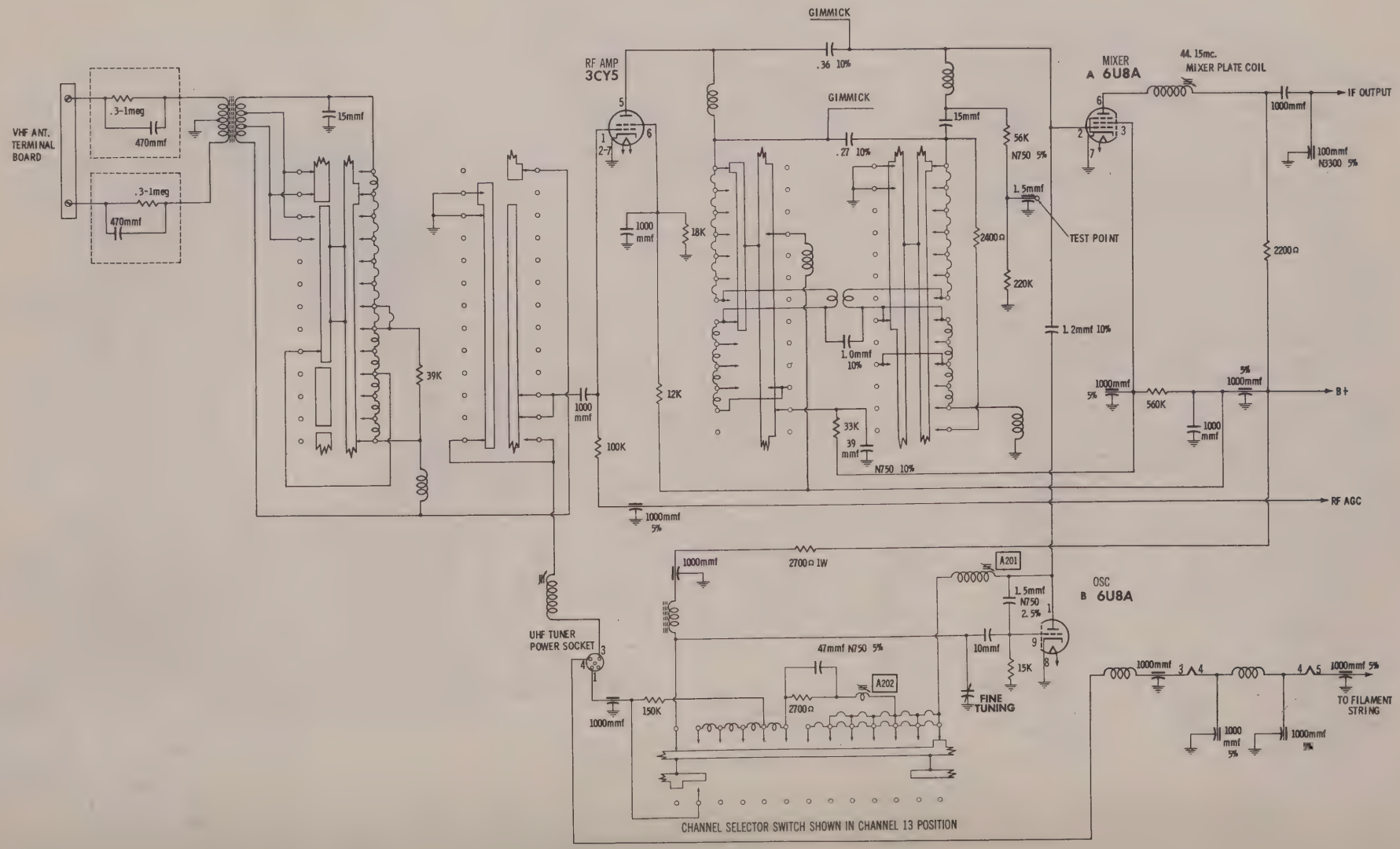
VHF TUNER 95-171-0 & 95-196-0

SILVERTONE CHASSIS 456.51640 thru 647, 528.51640 thru 647



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VHF TUNER with UHF provisions 95-204-0

TUNER PARTS LIST AND DESCRIPTIONS (cont)

95-170-0

COMPONENT COMBINATIONS

ITEM No.	USE	DESCRIPTION	SILVERTONE PART No.	REPLACEMENT DATA	
K201	Ant. Isolation	470mmf, .3-1meg	330-1	Centralab Sprague	RC-471 AC1-1
K202	Ant. Isolation	470mmf, .3-1meg	330-1	Centralab Sprague	RC-471 AC1-1

CRYSTAL DIODES

ITEM No.	ORIG. TYPE	REPLACEMENT DATA			NOTES
		SILVERTONE PART No.	CBS PART No.	SYLVANIA PART No.	
M201	ST-47 *	1N82A	1N82A	1N82A	UHF Mixer (Clip in) * Some versions may use 1N82A in this application.

TUNER ALIGNMENT INSTRUCTIONS

Suggested Alignment Tools: GENERAL CEMENT #8606, 8606L, 8282, 9295
WALSCO #2526, 2543, 2544, 2545

VHF OSCILLATOR ALIGNMENT

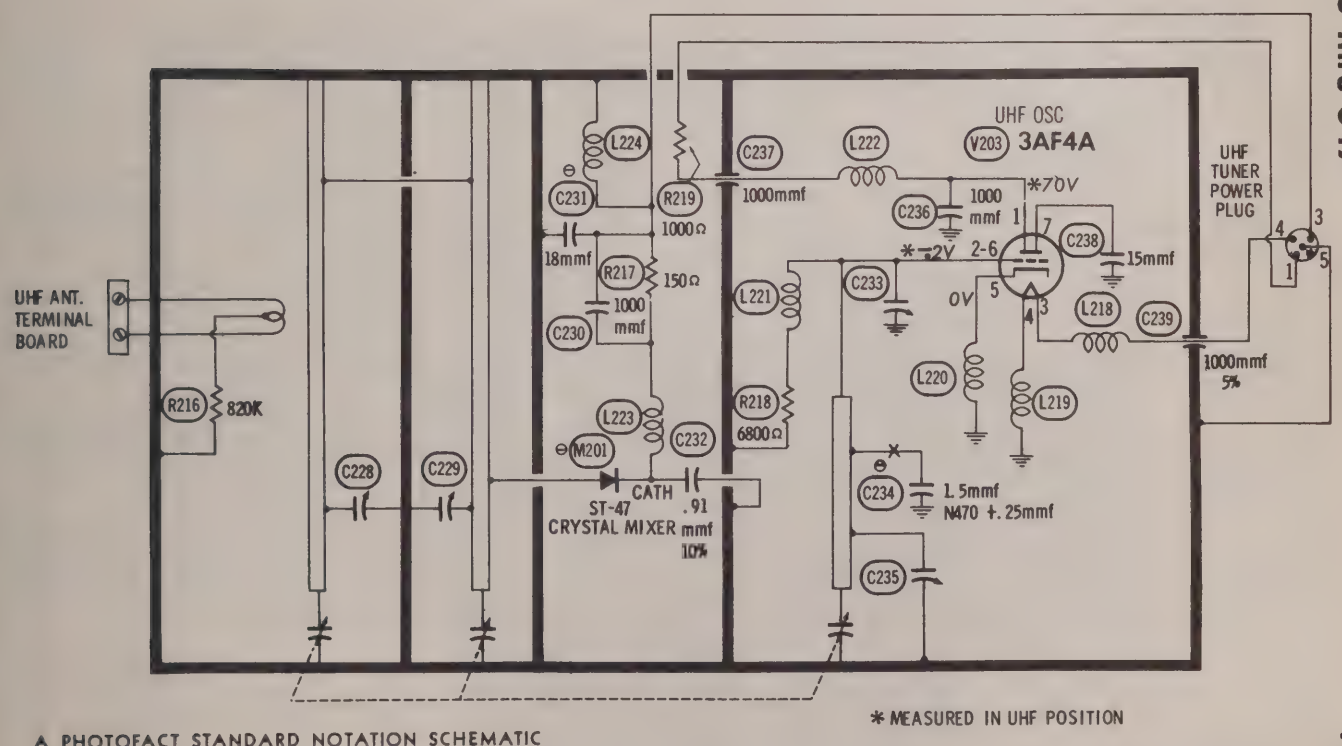
Set the Fine Tuning to the center of its range. Set the Channel Selector to the highest high band channel (13-7) operating in the area. Adjust the high band oscillator adjustment slug (A201) for best picture and sound. Switch Channel Selector to the highest low band channel (6-2) operating in the area and adjust the low band oscillator adjustment (A202) for best picture and sound. Recheck high band adjustment.

VHF RF AND MIXER ALIGNMENT

This portion of the receiver has been properly aligned at the factory and is very stable. Alignment of this portion should not be required in the field.

UHF TUNER ALIGNMENT

This portion of the receiver has been properly aligned at the factory and is very stable. Alignment of this portion should not be required in the field.



* MEASURED IN UHF POSITION

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UHF TUNER 95-159-0

CircuiTrace Numbers 1 thru 21

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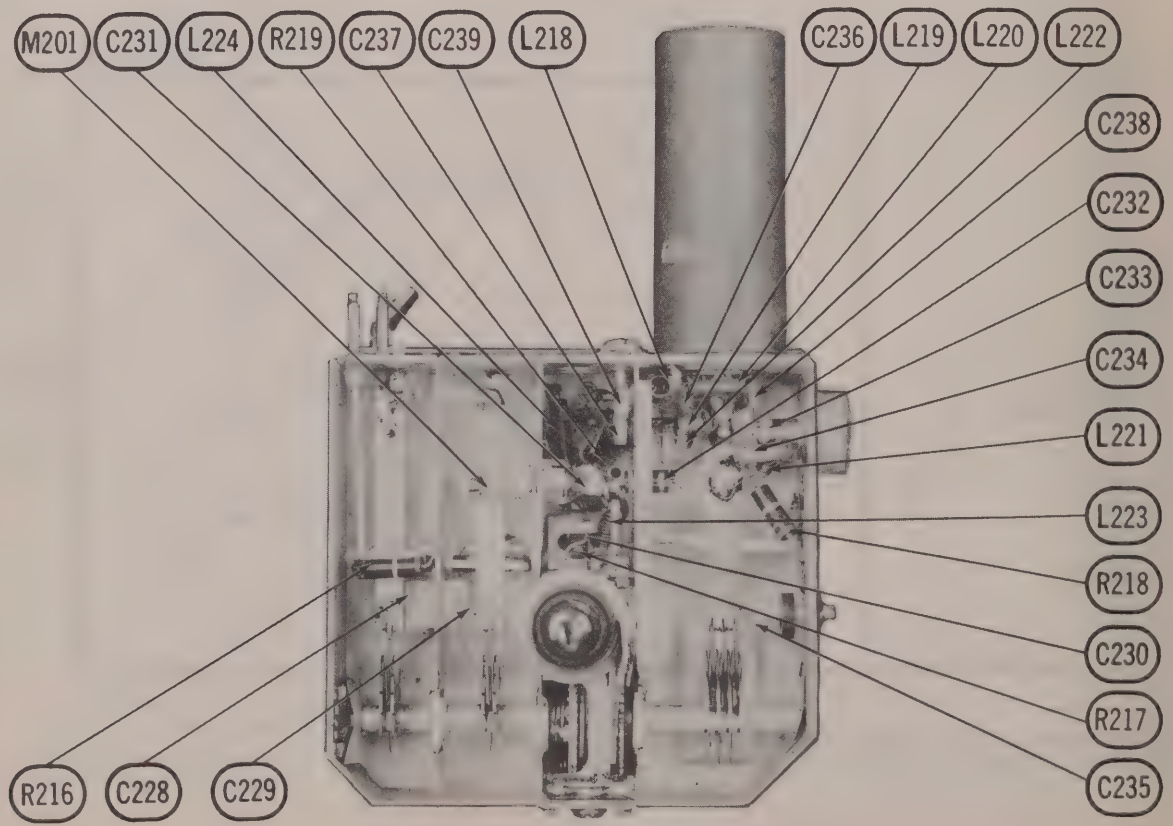
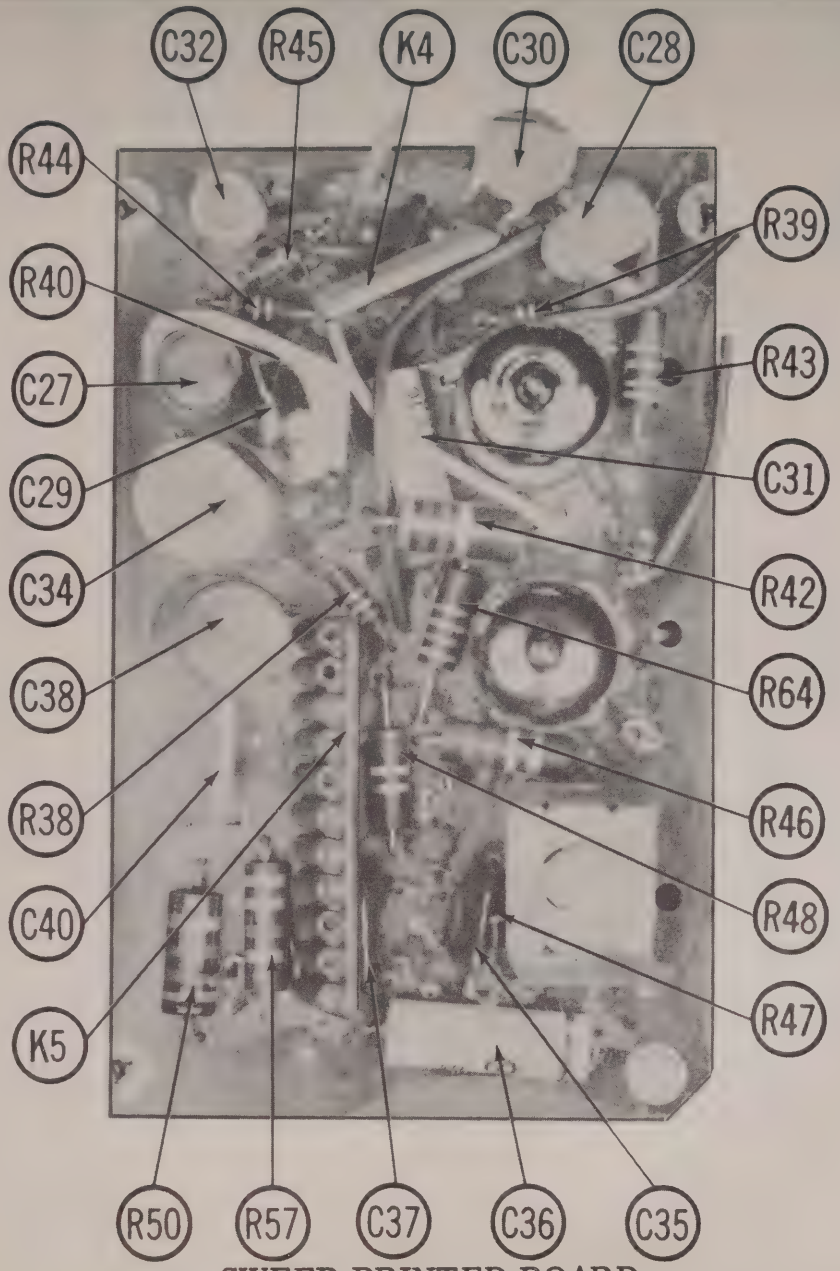
MAIN PRINTED BOARD

ARROWS INDICATING TUBE LOCATIONS ARE POINTING TO PIN 1 UNLESS OTHERWISE INDICATED

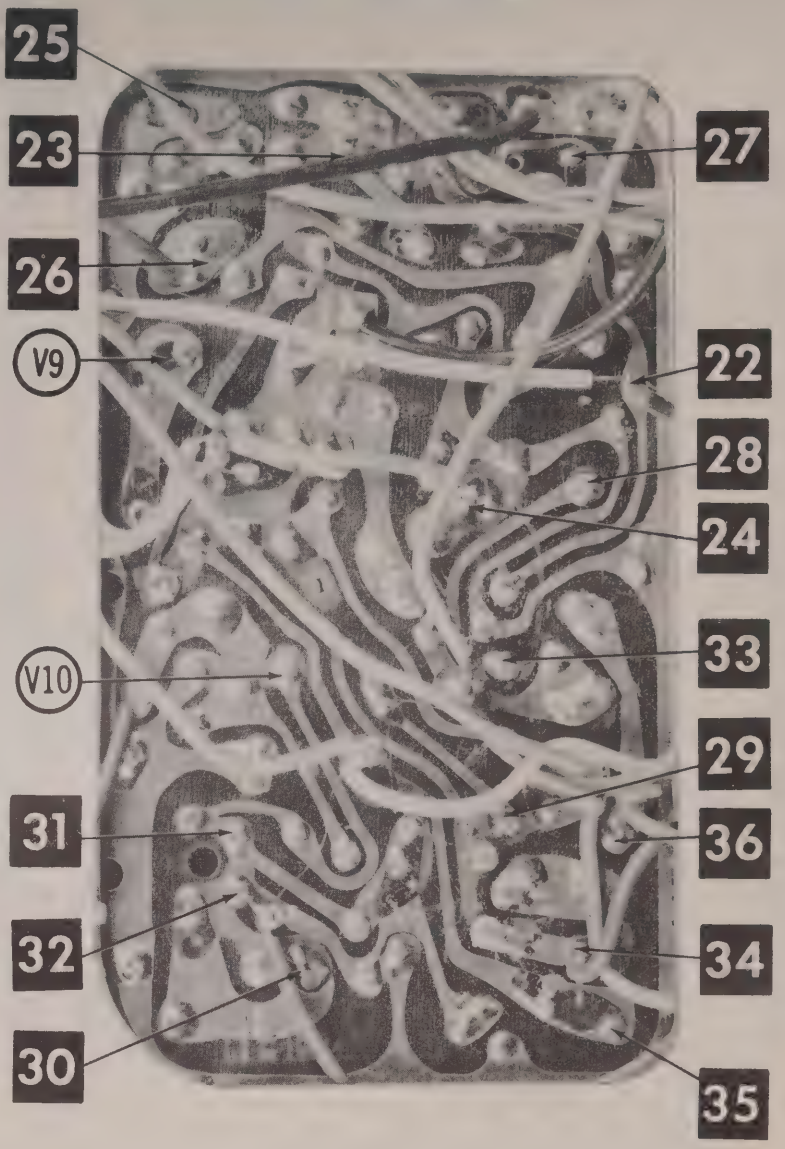


UHF TUNER 95-159-0



SWEEP PRINTED BOARD

CircuiTrace Numbers 22 thru 36



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ARROWS INDICATING TUBE LOCATIONS ARE POINTING TO PIN 1 UNLESS OTHERWISE INDICATED

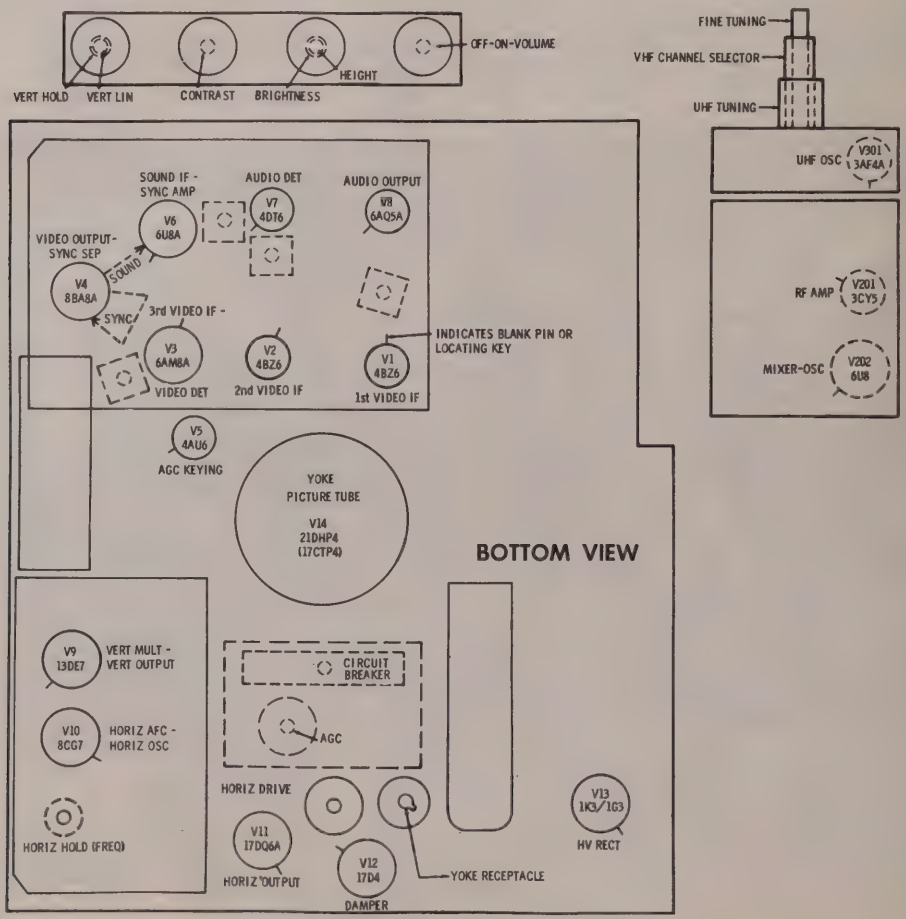
SILVERTONE CHASSIS 456.51640
thru 647, 528.51640 thru 647

FOLDER 2

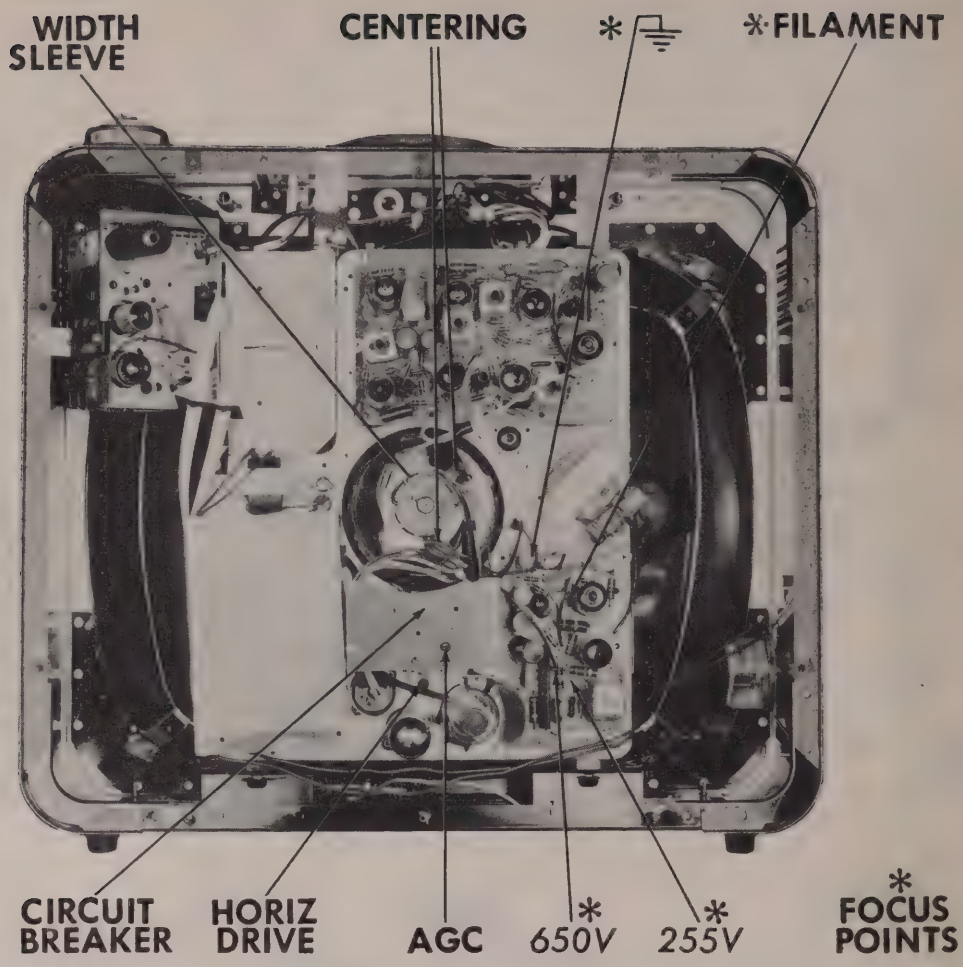
RESISTANCE MEASUREMENTS

ITEM	TUBE	Pin 1	Pin 2	Pin 3	Pin 4	Pin 5	Pin 6	Pin 7	Pin 8	Pin 9
V1	4BZ6	62K	56Ω	5.5Ω	6.5Ω	†4000Ω	†4000Ω	0Ω		
V2	4BZ6	57K	56Ω	6.5Ω	8Ω	†4000Ω	†4000Ω	0Ω		
V3	6AM8A	220Ω	.1Ω	†3500Ω	8Ω	10Ω	†3500Ω	.1Ω	4700Ω	0Ω
V4	8BA8A	0Ω	2.2meg	†470K	13Ω	10Ω	• 120K	4700Ω	†4700Ω	†5500Ω
V5	4AU6	†52K	†680Ω	4Ω	5.5Ω	275K	‡47K	†680Ω		
V6	6U8A	†10K	4Ω	†73K	13Ω	14.5Ω	†4700Ω	220Ω	3300Ω	†470K
V7	4DT6	5Ω	680Ω	14.5Ω	15.5Ω	‡490K	†22K	560K		
V8	6AQ5A	0Ω	220Ω	15.5Ω	17.5Ω	†3300Ω	†3000Ω	0Ω		
V9	13DE7	†500Ω	1meg	1meg	23Ω	19Ω	• ‡1.2meg	• 1.2meg	0Ω	• 800Ω
V10	8CG7	• †35K	830K	0Ω	26Ω	23Ω	†680Ω	1.5meg	760K	NC
V11	17DQ6A	TP	30Ω	TP	†9000Ω	1meg	TP	33Ω	0Ω	TOP CAP ‡9Ω
V12	17D4	NC	NC	¶	NC	†4.5Ω	TP	26Ω	30Ω	
V13	1K3/1G3		PINS	1 THRU 8	HAVE	INFINITE	RESISTANCE			TOP CAP ‡430Ω
V14	21DHP4	17.5Ω	57K	‡22K	0Ω	NC	TP	• 700K	19Ω	
V201	3CY5	1meg	0Ω	1Ω	2Ω	†4000Ω	†17K	0Ω		
V202	6U8	†5200Ω	275K	†37K	2Ω	4Ω	†4700Ω	0Ω	0Ω	15K
V301	3AF4A	†6300Ω	6800Ω	1Ω	0Ω	0Ω	NC	†6300Ω		
ITEM	TUBE	Pin 1	Pin 2	Pin 3	Pin 4	Pin 5	Pin 6	Pin 7	Pin 8	Pin 9

¶ THIS READING WILL VARY DEPENDING UPON THE CONDITION OF THE ELECTROLYTIC IN THE CIRCUIT.
• THIS READING WILL VARY. CONTROL SET FOR NORMAL OPERATION.
† MEASURED FROM 285 VOLT SOURCE.
‡ MEASURED FROM PIN 3 OF V12.
NC NO CONNECTION.
TP TIE POINT.



TUBE PLACEMENT CHART



CABINET—REAR VIEW

HORIZONTAL SWEEP CIRCUIT ADJUSTMENTS

Tune in a TV station and adjust the Horizontal Hold until the picture synchronizes horizontally. If the picture cannot be synced with the Horizontal Hold, turn the Waveform slug (B1) several turns out of the coil from from its original position. Readjust the Horizontal Hold until the picture synchronizes horizontally.

Connect the vertical amplifier of the scope thru a low capacity probe to point ◇D◇. Connect low side to chassis. Retouch the Horizontal Hold to synchronize the picture.

Adjust the Waveform slug (B1) for a Waveform similar to Fig. 2 with the sharp peak approximately 10% higher than the broad peak. Keep the picture in sync during this adjustment with the Horizontal Hold. Remove scope connection and retouch Horizontal Hold if necessary to synchronize picture horizontally.

Turn Horizontal Drive (R6) clockwise until drive lines appear. Then turn counterclockwise until drive lines just disappear.

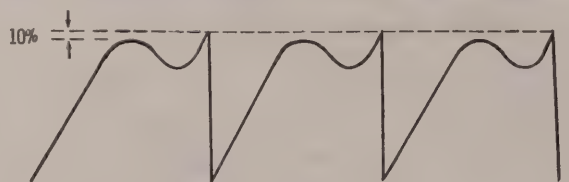


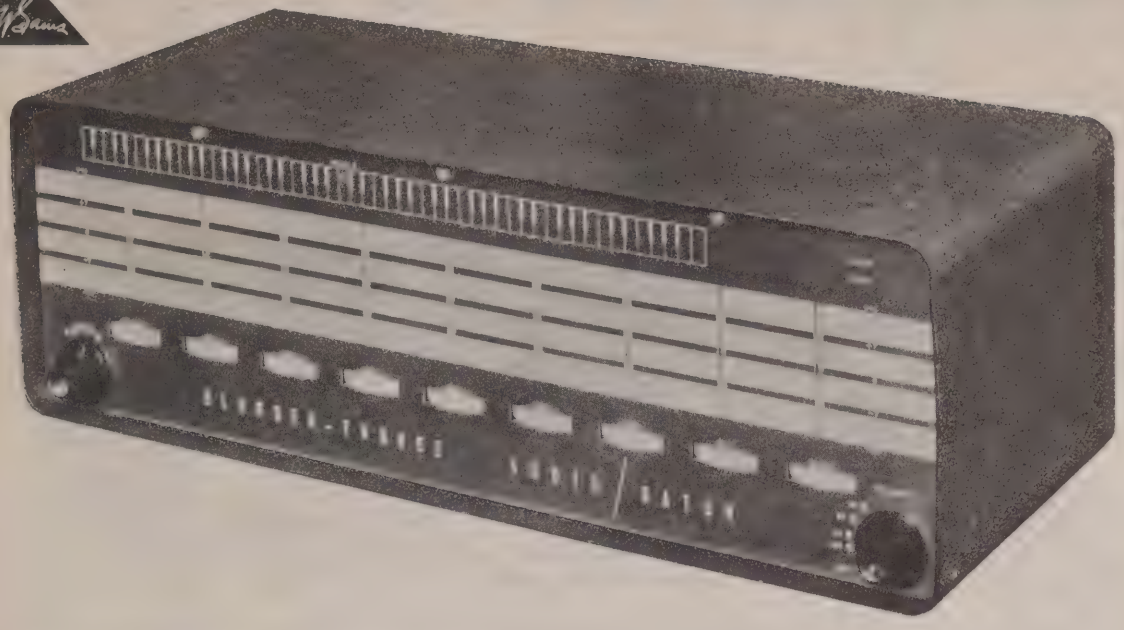
FIG. 2

PHOTOFACT* Folder

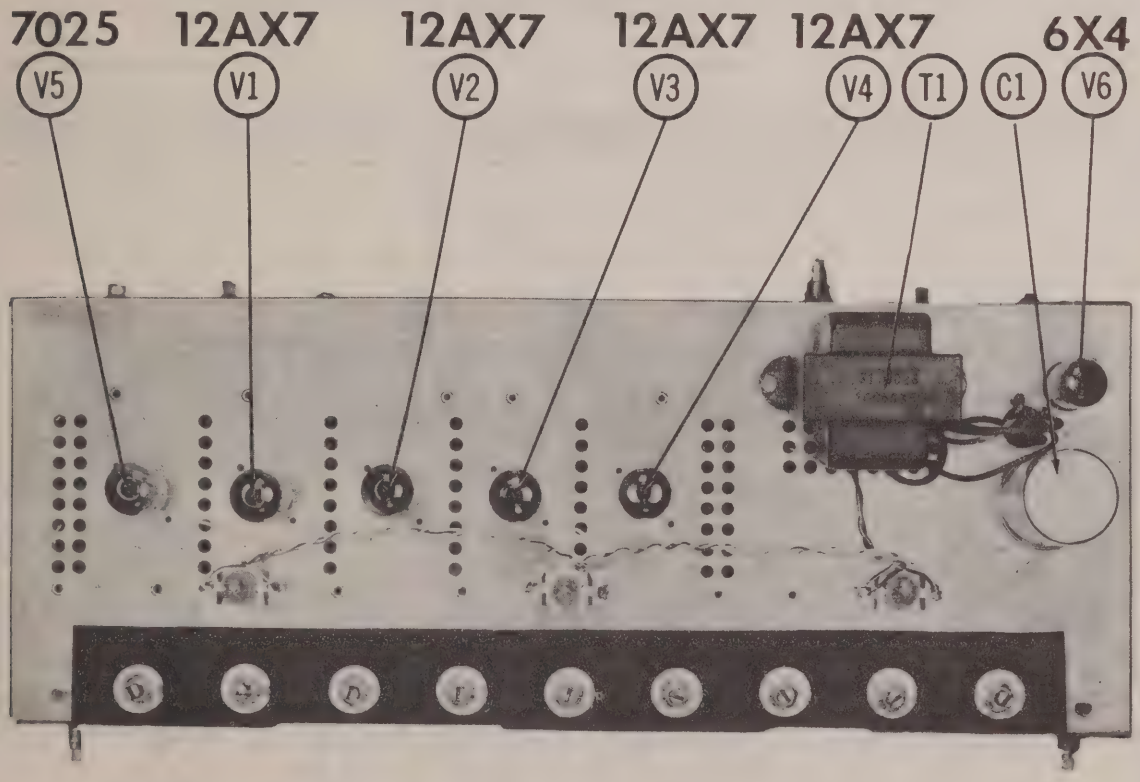
EIA MEMBER ELECTRONIC INDUSTRIES ASSOCIATION

BLONDER-TONGUE MODEL B-9

BLONDER-TONGUE
MODEL B-9



TRADE NAME	Blonder-Tongue Model B-9 (Audio Baton)
MANUFACTURER	Blonder-Tongue Laboratories, Inc., 9 Alling Street, Newark 2, N. Y.
TYPE SET	AC Operated 6 Tube Audio Control Amplifier
POWER SUPPLY	110-120 Volts AC, 60 Cycles RATING 21 Watts, .25 Amp. @117 Volts AC



BLONDER-TONGUE
MODEL B-9

HOWARD W. SAMS & CO., INC. Indianapolis 6, Indiana

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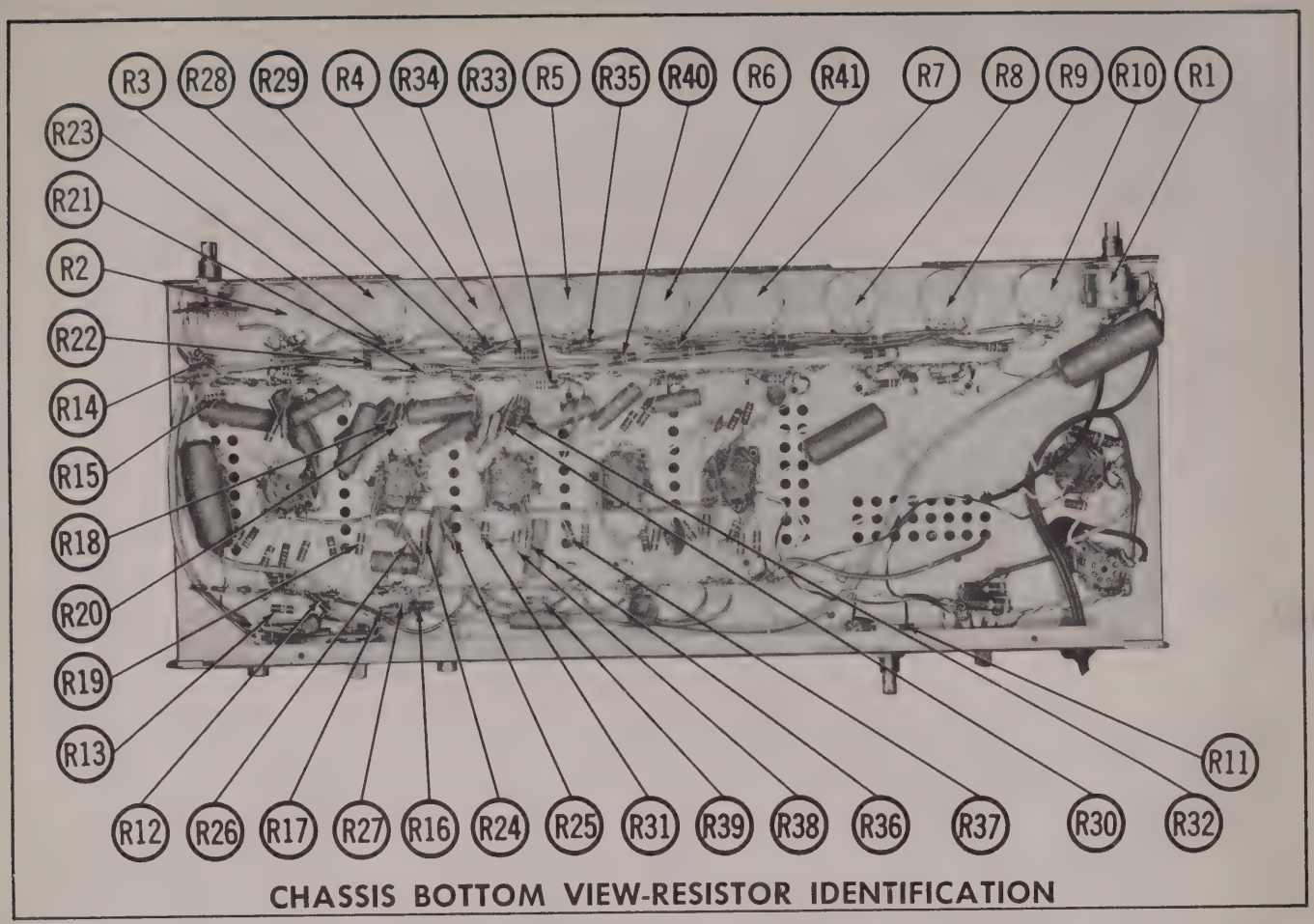
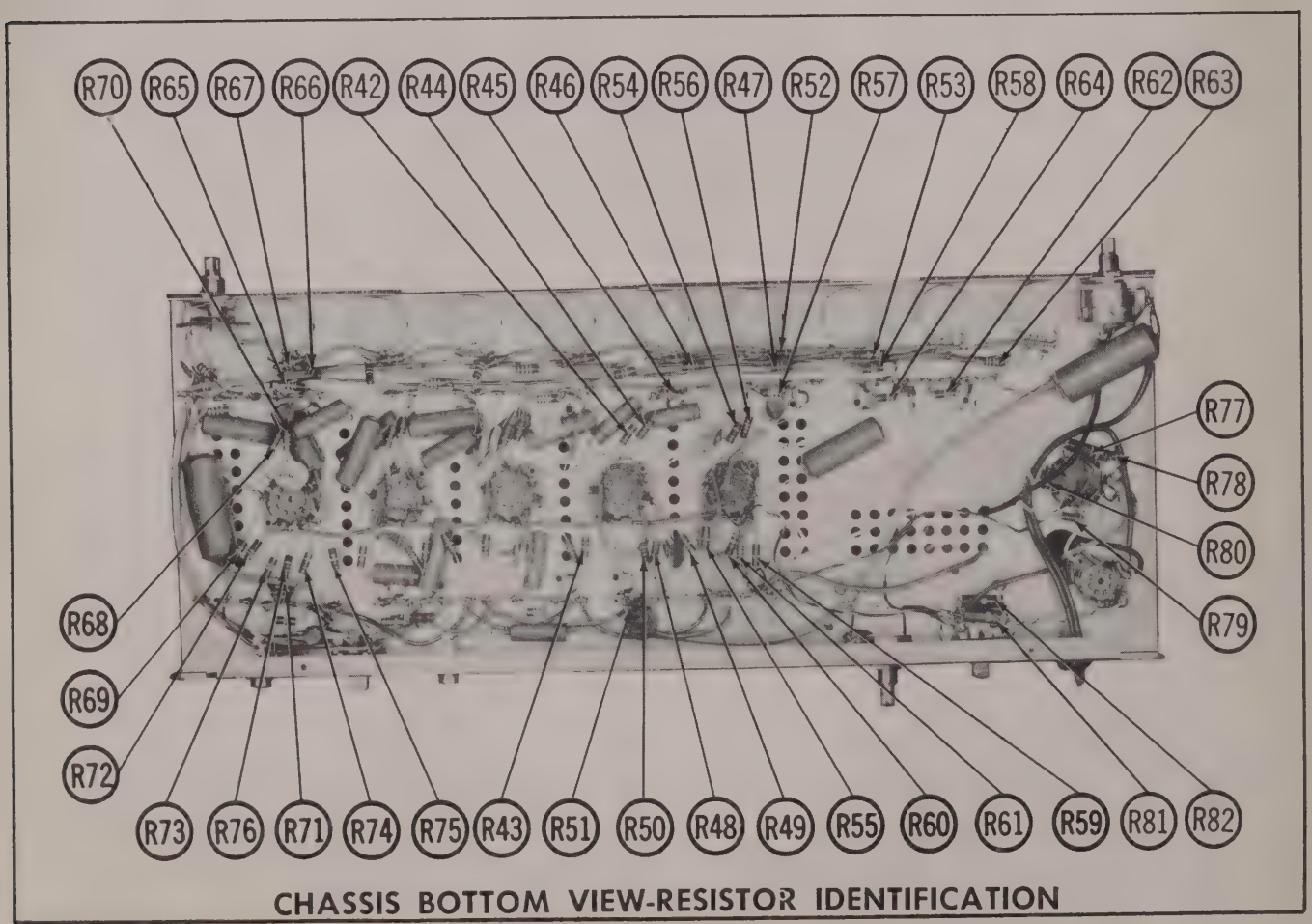
JZ292

SET 459 FOLDER 3



CHASSIS BOTTOM VIEW-RESISTOR IDENTIFICATION



CHASSIS BOTTOM VIEW-RESISTOR IDENTIFICATION

PARTS LIST AND DESCRIPTIONS

TUBES

◆ CBS ◆ GENERAL ELECTRIC ◆ RAYTHEON ◆ SYLVANIA ◆

ITEM No.	USE	TYPE
V1	80-CPS AF Amp-160-CPS AF Amp.	12AX7
V2	320-CPS AF Amp-640-CPS AF Amp.	12AX7
V3	1280-CPS AF Amp-2560-CPS AF Amp.	12AX7
V4	5120-CPS AF Amp-10240-CPS AF Amp.	12AX7
V5	AF Amp.	7025 (12AX7)*
V6	Rectifier	6X4

* Alternate

ELECTROLYTIC CAPACITORS

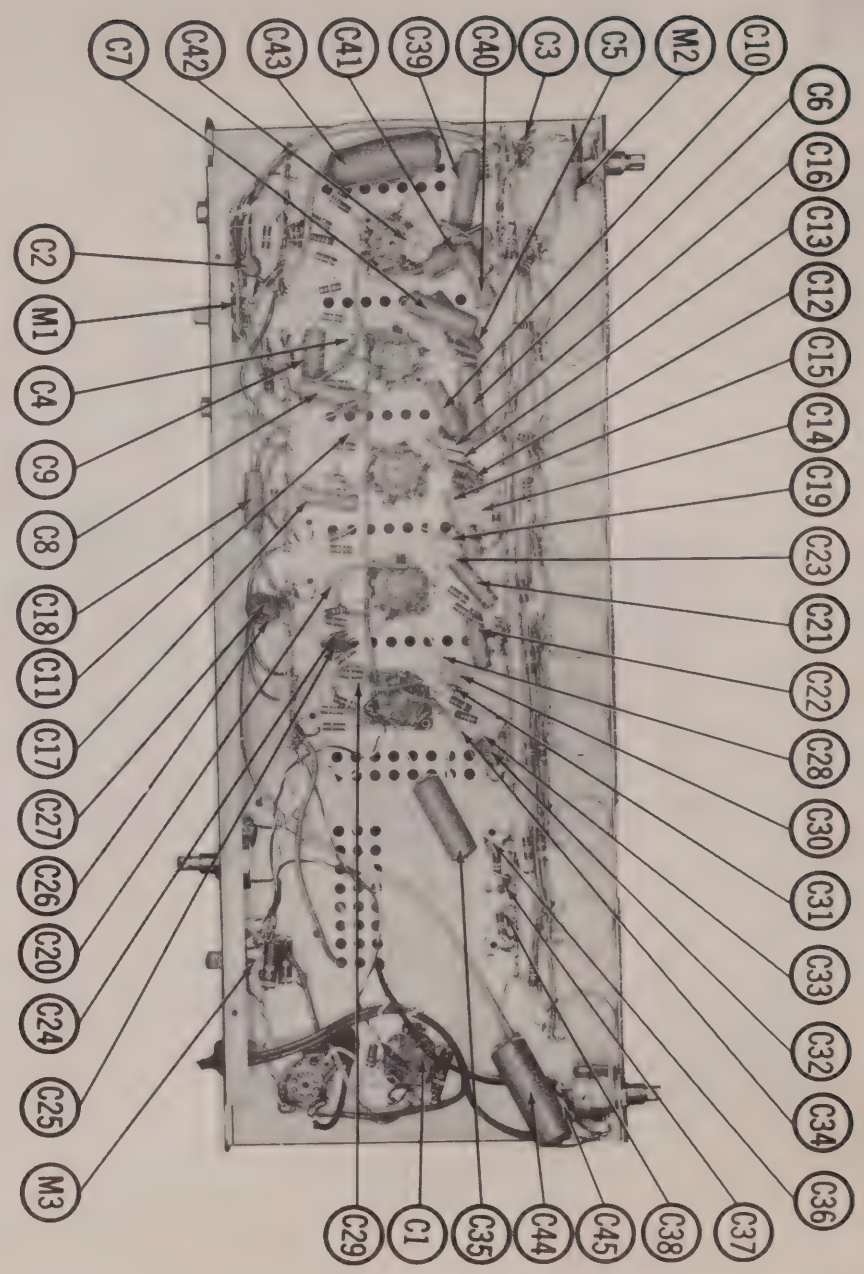
ITEM No.	RATING CAP.	RATING VOLT.	REPLACEMENT DATA Blonder-Tongue PART No.	AEROVOX PART No.	CORNELL-DUBILIER PART No.	MALLORY PART No.	PYRAMID PART No.	SPRAGUE PART No.	NOTES
C1A	●20	450		AFH4-67	D0520	FP430 97	TMQ-83	TVL-4724.3	
B	■20	400							
C	▲20	350							
D	20	25							

FIXED CAPACITORS

Capacity values given in the rating column are in mfd. for Paper Capacitors, and in mmfd. for Mica and Ceramic Capacitors.

ITEM No.	RATING CAP.	RATING VOLT	RATING TOL	REPLACEMENT DATA Blonder-Tongue PART No.	AEROVOX PART No.	CENTRALAB PART No.	CORNELL-DUBILIER PART No.	MALLORY PART No.	SPRAGUE PART No.	NOTES
C2	100		N1500 10%							
C3	100		N1500 10%							
C4A	5000				BPD2-2X0047	DD2-502	BYC6DD5	B-250	5HK-2D47	
B	5000						PJX4S51 5%	B-250		
C5	.051	400	5%				PJX4S51 5%			
C6	.051	400	5%				PJX4S12 5%		5BF-S12	
C7	.012	400	10%				PJX4S27 5%		5BF-S27	
C8	.027	400	5%				PJX4S27 5%		5BF-S27	
C9	.027	400	5%		V84C4D68		PM6D68	GTM-4268	6TM-D68	
C10	.0068	400	10%		BPD2-2X0047	DD2-502	BYC6DD2	B-250	5HK-2D47	
C11A	5000							B-250		
B	5000						PJX4S12 5%		5BF-S12	
C12	.012	400	5%		DI-1500		BYA10D15	JL-215	5GA-D15S 10%*	
C13	1500		10%		DI-1500		BYA10D15	JL-215	5GA-D15S 10%*	
C14	1500		10%				PJX4S12 5%		5BF-S12	
C15	.012	400	5%		DI-3300		PM6D33	JL-233	6TM-D33	
C16	3300		10%		V84C4D68 5%		PJX4D68 5%		5BF-D68	
C17	.0068	400	5%		V84C4D68 5%		PJX4D68 5%		5BF-D68	
C18	.0068	400	5%		DI-1500		PM6D15	JL-215	5GA-D15S 10%*	
C19	1500		10%		BPD2-2X0047	DD2-502	BYC6DD5	B-250	5HK-2D47	
C20A	5000									
B	5000				V84C4D33 5%		PJX4D33 5%		5BF-D33	
C21	.0033	400	5%		V84C4D33 5%		PJX4D33 5%		5BF-D33	
C22	.0033	400	5%		DI-820			JL-382	5GA-T82S 10%*	
C23	820		10%			TCL-100				
C24	100		N1500 10%						5GA-D16S 5%*	
C25	1600		5%						5GA-D16S 5%*	
C26	1600		5%			TCL-100				
C27	100		N1500 10%		DI-390		L10T39		5GA-T39S 10%*	
C28	390		10%		BPD2-2X0047	DD2-502	BYC6DD5	B-250	5HK-2D47	
C29A	5000							B-250		
B	5000									
C30	33		N470 10%						5GA-T82S 5%*	
C31	820		5%						5GA-T82S 5%*	
C32	820		5%							
C33	33		N470 10%		DI-220	D6-221	L10T22	JL-322	5GA-T22S 10%*	
C34	220		10%		P488N-1	DF-104	CUB4P1	GEM-401	4TM-P1	
C35	.1	400			DI-220	D6-221	L10T22	JL-322	5GA-T22S 10%*	
C36	220		10%			TCL-100				
C37	100		N1500 10%		DI-47	DD-470	L10Q47	CNO-447	5GA-Q47S 10%*	
C38	47		10%		V84C4D22	D6-222	PM6D22	GTM-4222	6TM-D22	
C39	.0022	400	10%		V84C4D47	D6-247	PM6D47	GTM-4247	6TM-D47	
C40	.0047	400	10%							

CHASSIS BOTTOM VIEW



PARTS LIST AND DESCRIPTIONS (Continued)

CAPACITORS (cont)

ITEM No.	RATING CAP.	RATING VOLT	RATING TOL	REPLACEMENT DATA Blonder-Tongue PART No.	AEROVOX PART No.	CENTRALAB PART No.	CORNELL-DUBILIER PART No.	MALLORY PART No.	SPRAGUE PART No.	NOTES
C41	.1	200			P488N-1	DF-104	CUB2P1	GEM-201	2TM-P1	①
C42	10000				BPD-01	DD-103	BYA10S1	B-110	5HK-S1	
C43	.22	400			P488N-22		CUB4P22	GEM-4022	4TM-P22	
C44	.22	400			P488N-22		CUB4P22	GEM-4022	4TM-P22	
C45	5000	1400			DAC-9	DD30-502	HVE16D5	2HV-247	20HK-D5	②

* Not normally in distributor's stock. Available thru distributor on order to manufacturer.
① Some versions may use 10,000mmf in this application.
② Not used in some versions.

CONTROLS

ITEM No.	RATING RESISTANCE	RATING WATTS	REPLACEMENT DATA Blonder-Tongue PART No.	CENTRALAB PART No.	CLAROSTAT PART No.	IRC PART No.	MALLORY PART No.	INSTALLATION NOTES
R1A	50K	1/2	1450302	B-32	A47-50K-Z	Q13-123	U33	Volume
B	Shaft			Not Req.	KSS-3	Not Req.	Not Req.	
C	Switch			KR-1	SWE-12	76-1	US-26	Off-On
R2	500K	1/2	1450407	B-61		Q17-133		Tone, 40-CPS
R3	500K	1/2	1450407	B-61		Q17-133		Tone, 80-CPS
R4	500K	1/2	1450407	B-61		Q17-133		Tone, 160-CPS
R5	500K	1/2	1450407	B-61		Q17-133		Tone, 320-CPS
R6	500K	1/2	1450407	B-61		Q17-133		Tone, 640-CPS
R7	500K	1/2	1450407	B-61		Q17-133		Tone, 1280-CPS
R8	500K	1/2	1450407	B-61		Q17-133		Tone, 2560-CPS
R9	500K	1/2	1450407	B-61		Q17-133		Tone, 5120-CPS
R10	500K	1/2	1450407	B-61		Q17-133		Tone, 10,240-CPS
R11A	250Ω	1/2	1425103	AB-2		Q11-201		Hum Balance
B	Shaft			AK-1		Not Req.		

RESISTORS

All wattages 1/2 watt, or less, unless otherwise listed.

ITEM No.	RATING	REMARKS
R12	220K	
R13	220K	
R14	390K	
R15	33K	
R16	100Ω	
R17	2.2meg	
R18	2.2meg	
R19	220K 5%	
R20	6800Ω 5%	
R21	390K	
R22	680K	
R23	1.8meg	

ITEM No.	RATING	REMARKS
R24	2.2meg	
R25	220K 5%	
R26	6800Ω 5%	
R27	390K	
R28	680K	
R29	1meg	
R30	2.2meg	
R31	220K 5%	
R32	6800Ω 5%	
R33	390K	
R34	680K	
R35	1.2meg	

ITEM No.	RATING	REMARKS
R36	2.2meg	
R37	220K 5%	
R38	6800Ω 5%	
R39	390K	
R40	560K	
R41	1.5meg	
R42	2.2meg	
R43	220K 5%	
R44	6800Ω 5%	
R45	390K	
R46	560K	
R47	2.7meg	

ITEM No.	RATING	REMARKS
R48	2.2meg	
R49	220K 5%	
R50	6800Ω 5%	
R51	390K	
R52	560K	
R53	4.7meg	
R54	2.2meg	
R55	220K	
R56	6800Ω 5%	
R57	390K	
R58	560K	
R59	2.2meg	

* Alternate

RESISTORS (cont)

ITEM No.	RATING	REMARKS
R60	56K	(68K)*
R61	2200Ω	
R62	220K	
R63	470K	
R64	100K	
R65	330K	
R66	680K	
R67	680K	
R68	2.2meg	
R69	220K 5%	
R70	2200Ω	
R71	5600Ω	

ITEM No.	RATING	REMARKS
R72	330K	
R73	150K	
R74	2.2meg	
R75	220K 5%	
R76	2200Ω	
R77	150K 1W	
R78	8200Ω	
R79	4700Ω	(15K)*
R80	4700Ω	(12K)*
R81	8.2Ω 1W	
R82	8.2Ω 1W	(10Ω)*

TRANSFORMER (POWER)

ITEM No.	RATING PRI.	RATING SEC. 1	RATING SEC. 2	REPLACEMENT DATA Blonder-Tongue PART No.	Halldorson PART No.	Merit PART No.	Ram PART No.	Stancor PART No.	Thordarson PART No.	Triad PART No.
T1	117V ⓐ .25A	550 VCT ⓐ .007A	6.3V ⓐ 2.3A	3110026						

MISCELLANEOUS

ITEM No.	PART NAME	Blonder - Tongue PART No.	NOTES
M1	Switch		Power Amplifier Sensitivity, (DPDT- Slide Type)
M2	Switch		Bypassing
M3	Switch		Light Level, (DPTT- Slide Type)

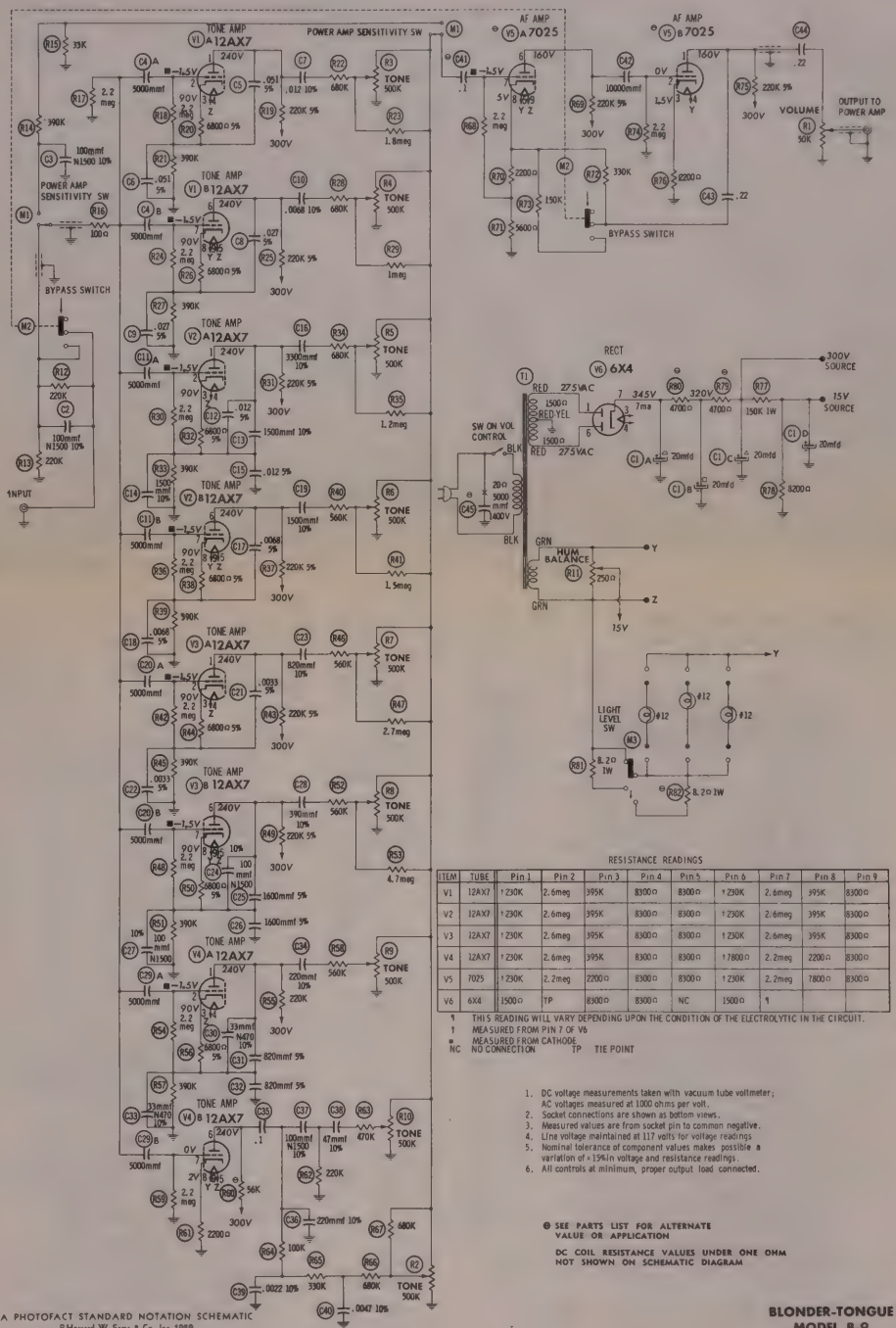
CABINETS & CABINET PARTS

(When Ordering Cabinets & Cabinet Parts, Specify Model, Chassis & Color)

WIRING DATA

General-use Unshielded Hook-up Wire ..... Use BELDEN No. 8530 (Solid) Available in Ten Colors
8524 (Stranded) Available in Ten Colors

Power Cord ..... Use BELDEN No. 1765-B (6 Ft. Length)
1725-K (7½ Ft. Length)



RESISTANCE READINGS

ITEM	TUBE	Pin 1	Pin 2	Pin 3	Pin 4	Pin 5	Pin 6	Pin 7	Pin 8	Pin 9
V1	12AX7	†230K	2.6meg	395K	8300Ω	8300Ω	†230K	2.6meg	395K	8300Ω
V2	12AX7	†230K	2.6meg	395K	8300Ω	8300Ω	†230K	2.6meg	395K	8300Ω
V3	12AX7	†230K	2.6meg	395K	8300Ω	8300Ω	†230K	2.6meg	395K	8300Ω
V4	12AX7	†230K	2.6meg	395K	8300Ω	8300Ω	†7800Ω	2.2meg	2200Ω	8300Ω
V5	7025	†230K	2.2meg	2200Ω	8300Ω	8300Ω	†230K	2.2meg	7800Ω	8300Ω
V6	6X4	1500Ω	TP	8300Ω	8300Ω	NC	1500Ω	¶		

¶ THIS READING WILL VARY DEPENDING UPON THE CONDITION OF THE ELECTROLYTIC IN THE CIRCUIT.
† MEASURED FROM PIN 7 OF V6
■ MEASURED FROM CATHODE
NC NO CONNECTION TP TIE POINT

1. DC voltage measurements taken with vacuum tube voltmeter; AC voltages measured at 1000 ohms per volt.
2. Socket connections are shown as bottom views.
3. Measured values are from socket pin to common negative.
4. Line voltage maintained at 117 volts for voltage readings
5. Nominal tolerance of component values makes possible a variation of ±15% in voltage and resistance readings.
6. All controls at minimum, proper output load connected.

⊕ SEE PARTS LIST FOR ALTERNATE VALUE OR APPLICATION

DC COIL RESISTANCE VALUES UNDER ONE OHM NOT SHOWN ON SCHEMATIC DIAGRAM

A PHOTOFACT STANDARD NOTATION SCHEMATIC

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BLONDER-TONGUE MODEL B-9

PHOTOFACT* Folder with CIRCUITRACE*

EIA MEMBER ELECTRONIC INDUSTRIES ASSOCIATION

CROWN
MODEL TR-666

CROWN
MODEL TR-666

CROWN
MODEL TR-666

TRADE NAME	Crown Model TR-666
IMPORTER	Shriro, Inc., 276 Fourth Ave., New York 10, N. Y.
TYPE SET	Battery Operated Portable Transistorized AM Receiver
POWER SUPPLY	9 Volts DC
RATING	5.5MA @ 9 Volts DC (No Signal, Min. Volume) 6MA @ 9 Volts DC (Signal, Normal Volume)
TUNING RANGE—BROADCAST	525-1650KC

ALIGNMENT INSTRUCTIONS

ALIGNMENT INSTRUCTIONS—READ CAREFULLY BEFORE ATTEMPTING ALIGNMENT

Volume control should be at maximum position. Output of signal generator should be no higher than necessary to obtain an output reading.
Short out oscillator section of tuning gang.
Suggested Alignment Tools: A5, A6 ..... GENERAL CEMENT #9087, 9089
WALSCO #2528

	DUMMY ANTENNA	SIGNAL GENERATOR COUPLING	SIGNAL GENERATOR FREQUENCY	RADIO DIAL SETTING	OUTPUT METER	ADJUST	REMARKS
1.		Loop	455KC (400∿ Mod)	Tuning gang fully open	Across voice coil	A1, A2, A3	Fashion loop of several turns of wire and radiate signal into loop of receiver. Adjust for maximum output.
2.		"	525KC	Tuning gang fully closed	"	A4	Remove short from oscillator section of tuning gang. Adjust A4 for maximum output.
3.		"	1650KC	Tuning gang fully open	"	A5, A6	Adjust for maximum output.
4.		"	650KC	650KC	"	A7	"

HOWARD W. SAMS & CO., INC. Indianapolis 6, Indiana

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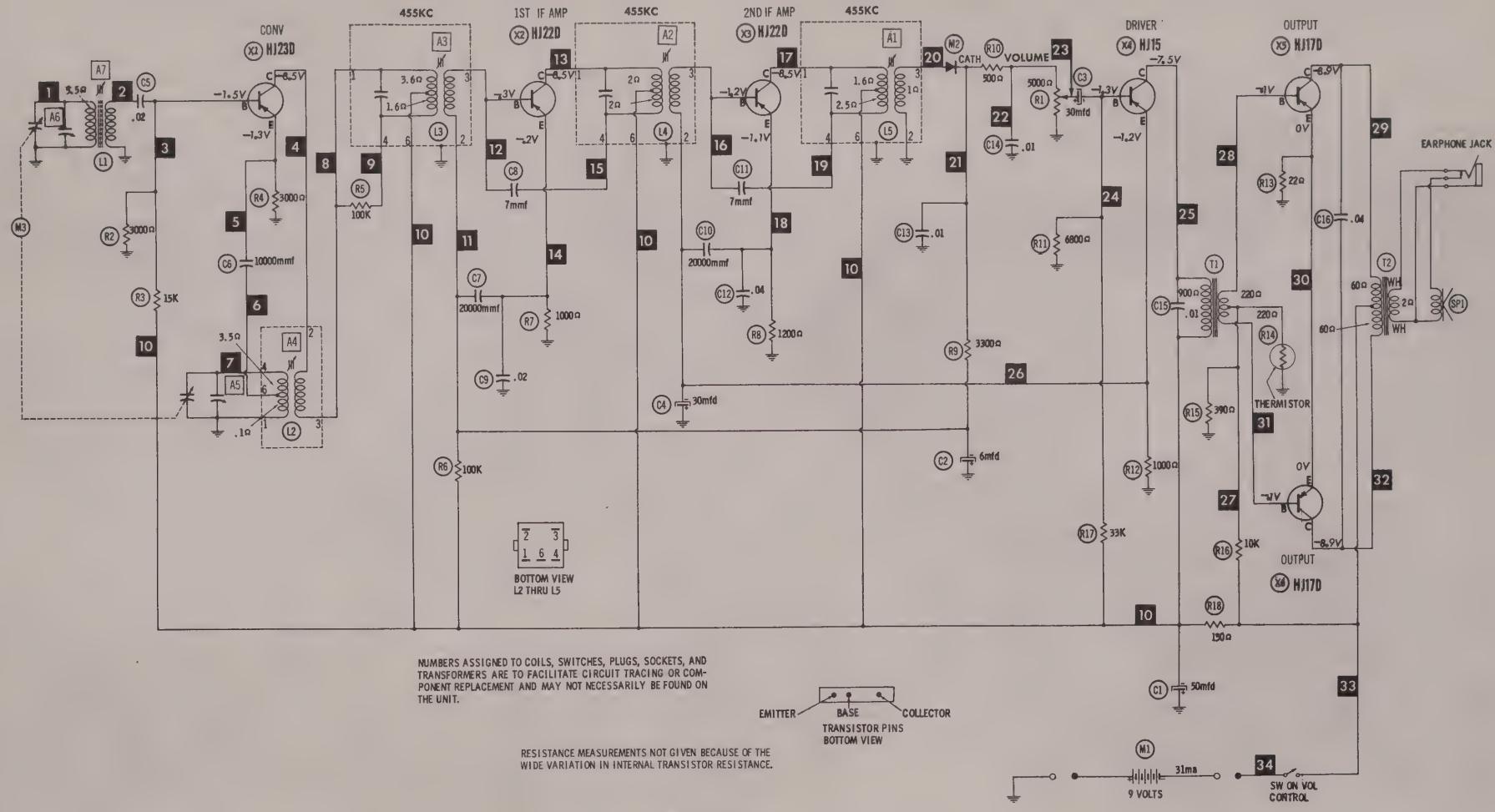
JF240

SET 459 FOLDER 4



● SEE PARTS LIST FOR ALTERNATE VALUE OR APPLICATION

DC COIL RESISTANCE VALUES UNDER ONE OHM NOT SHOWN ON SCHEMATIC DIAGRAM

1. DC voltage measurements taken with vacuum tube voltmeter.
2. Socket connections are shown as bottom views.
3. Measured values are from socket pin to common negative.
4. Nominal tolerance on component values makes possible a variation of ±15% in voltage and resistance readings.
5. Volume control at maximum, no signal applied for voltage measurements.

A PHOTOFACT STANDARD NOTATION SCHEMATIC
with CIRCUITRACE

©Howard W. Sams & Co., Inc. 1959

CROWN
MODEL TR-666

PARTS LIST AND DESCRIPTIONS

TRANSISTORS

ITEM No.	ORIG. TYPE	USE	REPLACEMENT DATA				NOTES
			CBS PART No.	RCA PART No.	RAYTHEON PART No.	SYLVANIA PART No.	
X1	HJ23D	Converter			2N486		PNP
X2	HJ22D	1st IF Amplifier			2N483		PNP
X3	HJ22D	2nd IF Amplifier			2N482		PNP
X4	HJ15	Driver			2N362		PNP
X5	HJ17D	Output			2N632		PNP
X6	HJ17D	Output			2N632		PNP Matched Pair

ELECTROLYTIC CAPACITORS

ITEM No.	RATING		REPLACEMENT DATA						NOTES
	CAP.	VOLT.	CROWN PART No.	AEROVOX PART No.	CORNELL-DUBILIER PART No.	MALLORY PART No.	PYRAMID PART No.	SPRAGUE PART No.	
C1	50	10		XPP-10050	NLW50-10	TT10X50	ML50-15	TE-1119	
C2	6	6		XPP-6006	NLW5-15	TT6X5	ML6-6	TE-1085	
C3	30	6		PWE6030	NLW30-6	TT6X30	ML30-6	TE-1092	
C4	30	6		PWE6030	NLW30-6	TT6X30	ML30-6	TE-1092	

FIXED CAPACITORS

Capacity values given in the rating column are in mfd. for Paper Capacitors, and in mmfd. for Mica and Ceramic Capacitors.

ITEM No.	RATING			REPLACEMENT DATA						NOTES
	CAP.	VOLT	TOL	CROWN PART No.	AEROVOX PART No.	CENTRALAB PART No.	CORNELL-DUBILIER PART No.	MALLORY PART No.	SPRAGUE PART No.	
C5	.02	50				DDM-203	H-05S2	TA-120	TG-S20	
C6	10000				C-80V103AM	DM-103	H-05S1	TA-110	TG-S10	
C7	20000				C-80V203AM	DDM-203	H-05S2	TA-120	TG-S20	
C8	7				DI-6.8	MD-7R5	L10V7	CNO-568	5GA-V75	
C9	.02	50				DDM-203	H-05S2	TA-120	TG-S20	
C10	20000				C-80V203AM	DDM-203	H-05S2	TA-120	TG-S20	
C11	7				DI-6.8	MD-7R5	L10V7	CNO-568	5GA-V75	
C12	.04	50				DDA-503	H-05S5	TA-150	TG-S50	
C13	.01	50				DM-103	H-05S1	TA-110	TG-S10	
C14	.01	50				DM-103	H-05S1	TA-110	TG-S10	
C15	.01	50				DM-103	H-05S1	TA-110	TG-S10	
C16	.04	50				DDA-503	H-05S5	TA-150	TG-S50	

CONTROLS

ITEM No.	RATING		REPLACEMENT DATA					INSTALLATION NOTES
	RESISTANCE	WATTS	CROWN PART No.	CENTRALAB PART No.	CLAROSTAT PART No.	IRC PART No.	MALLORY PART No.	
R1	5000Ω	1/4		B16-214				Volume & Switch

RESISTORS

All wattages 1/2 watt, or less, unless otherwise listed.

ITEM No.	RATING	REMARKS
R2	3000Ω	
R3	15K	
R4	3000Ω	
R5	100K	

ITEM No.	RATING	REMARKS
R8	1200Ω	
R9	3300Ω	
R10	500Ω	
R11	6800Ω	

ITEM No.	RATING	REMARKS
R14		Temp. Comp.
R15	390Ω	
R16	10K	
R17	33K	

PRINTED BOARD

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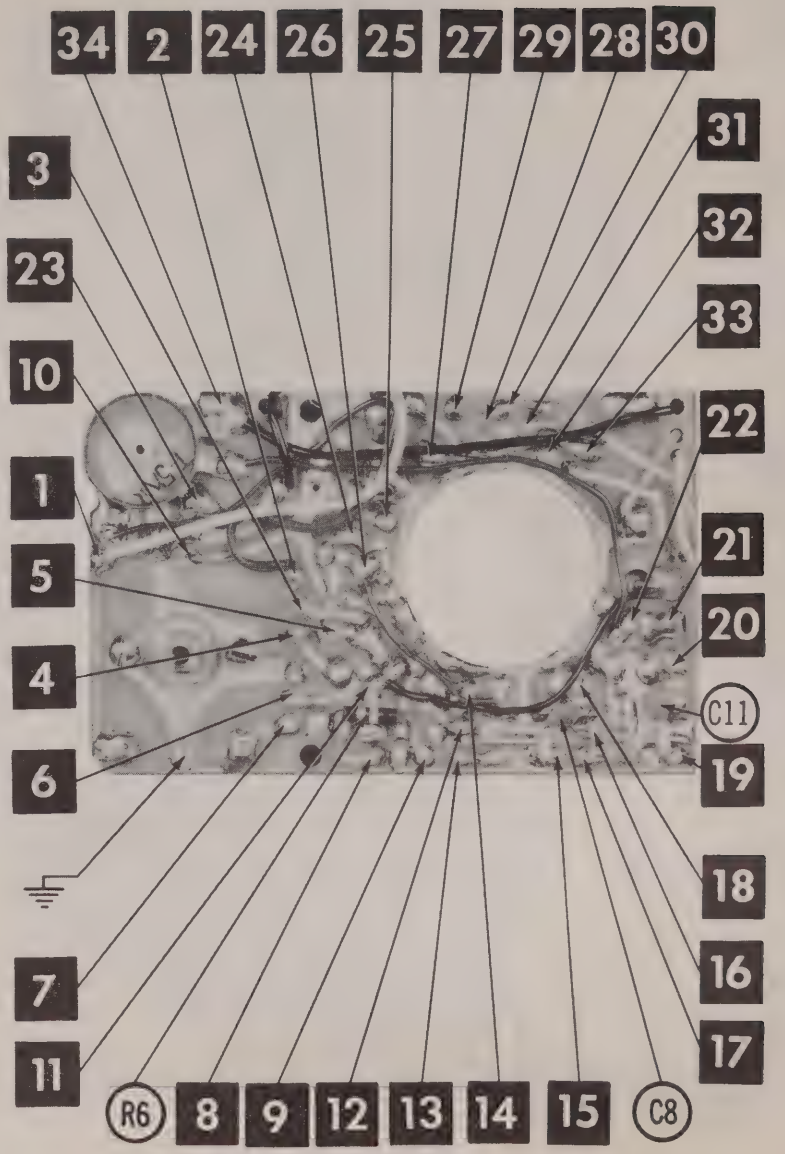


PARTS LIST AND DESCRIPTIONS (Continued)

COILS (RF-IF)

ITEM No.	USE	REPLACEMENT DATA						NOTES
		CROWN PART No.	Gramer PART No.	Meissner PART No.	Merit PART No.	Miller PART No.	Ram PART No.	
L1	Loopstick							
L2	Osc. Coil							
L3	1st IF Trans.							
L4	2nd IF Trans.							
L5	3rd IF Trans.							

TRANSFORMER (DRIVER)

ITEM No.	TURNS RATIO		REPLACEMENT DATA						NOTES
	PRI.	SEC.	CROWN PART No.	Halldorson PART No.	Merit PART No.	Stancor PART No.	Thordarson PART No.	Triad PART No.	
T1	4	1	TRT-13						

TRANSFORMER (AUDIO OUTPUT)

ITEM No.	IMPEDANCE		REPLACEMENT DATA							NOTES
	PRI.	SEC.	CROWN PART No.	Halldorson PART No.	Merit PART No.	Ram PART No.	Stancor PART No.	Thordarson PART No.	Triad PART No.	
T2	500Ω CT	8Ω	TRT-14	TR-22			TA-21	TR-22		

SPEAKER

ITEM No.	TYPE			REPLACEMENT DATA		NOTES
	SIZE	FIELD	V. C. IMP.	CROWN PART No.	QUAM PART No.	
SP1	2 1/4"	PM	9-10Ω			

BATTERIES

ITEM No.	VOLTAGE	CROWN PART No.	REPLACEMENT DATA						NOTES
			BURGESS		EVEREADY		MALLORY		
			"A"	"B"	"A"	"B"	"A"	"B"	
M1	9V			2U6		216		TR-146R	

CRYSTAL DIODES

ITEM No.	ORIG. TYPE	REPLACEMENT DATA				NOTES
		CROWN PART No.	CBS PART No.	RAYTHEON PART No.	SYLVANIA PART No.	
M2		SD-46	1N60	1N60	1N295	Detector (Pigtail)

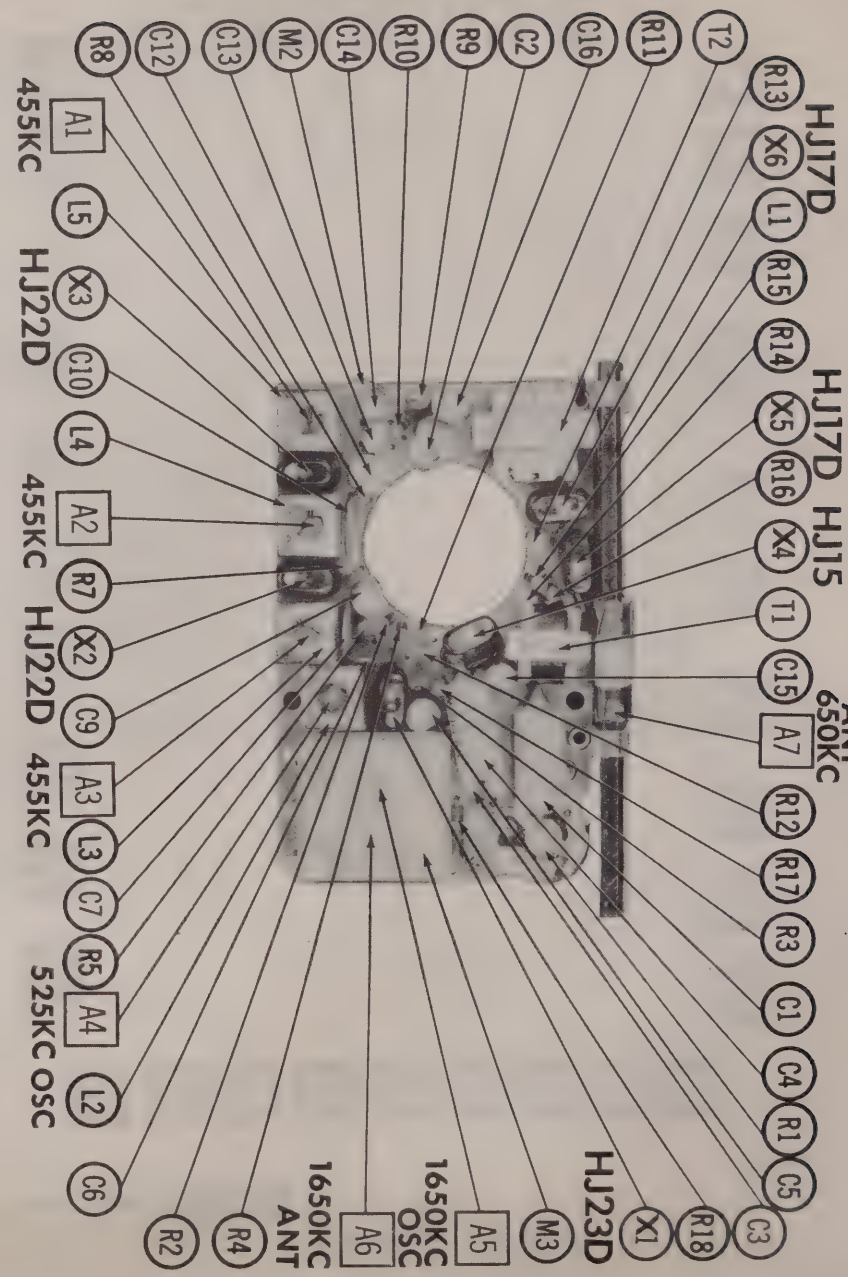
MISCELLANEOUS

ITEM No.	PART NAME	CROWN PART No.	NOTES
M3	Tuning Cap.		2 Gang

WIRING DATA

General-use Unshielded Hook-up Wire ..... Use BELDEN No. 8530 (Solid) Available in Ten Colors
8524 (Stranded) Available in Ten Colors

CHASSIS—TOP VIEW



PHOTOFACT* Folder

GENERAL ELECTRIC MODELS MS-2000, XMS-2000

GENERAL ELECTRIC MODELS
MS-2000, XMS-2000

MODEL MS-2000

TRADE NAME	General Electric Models MS-2000, XMS-2000
MANUFACTURER	General Electric Co., Specialty Electronic Components Dept., Auburn, N. Y.
TYPE SET	AC Operated 11 Tube Stereo Amplifier
POWER SUPPLY	105-125 Volts AC, 60 Cycles RATING 110 Watts, 1.1 Amp. @117 Volts AC

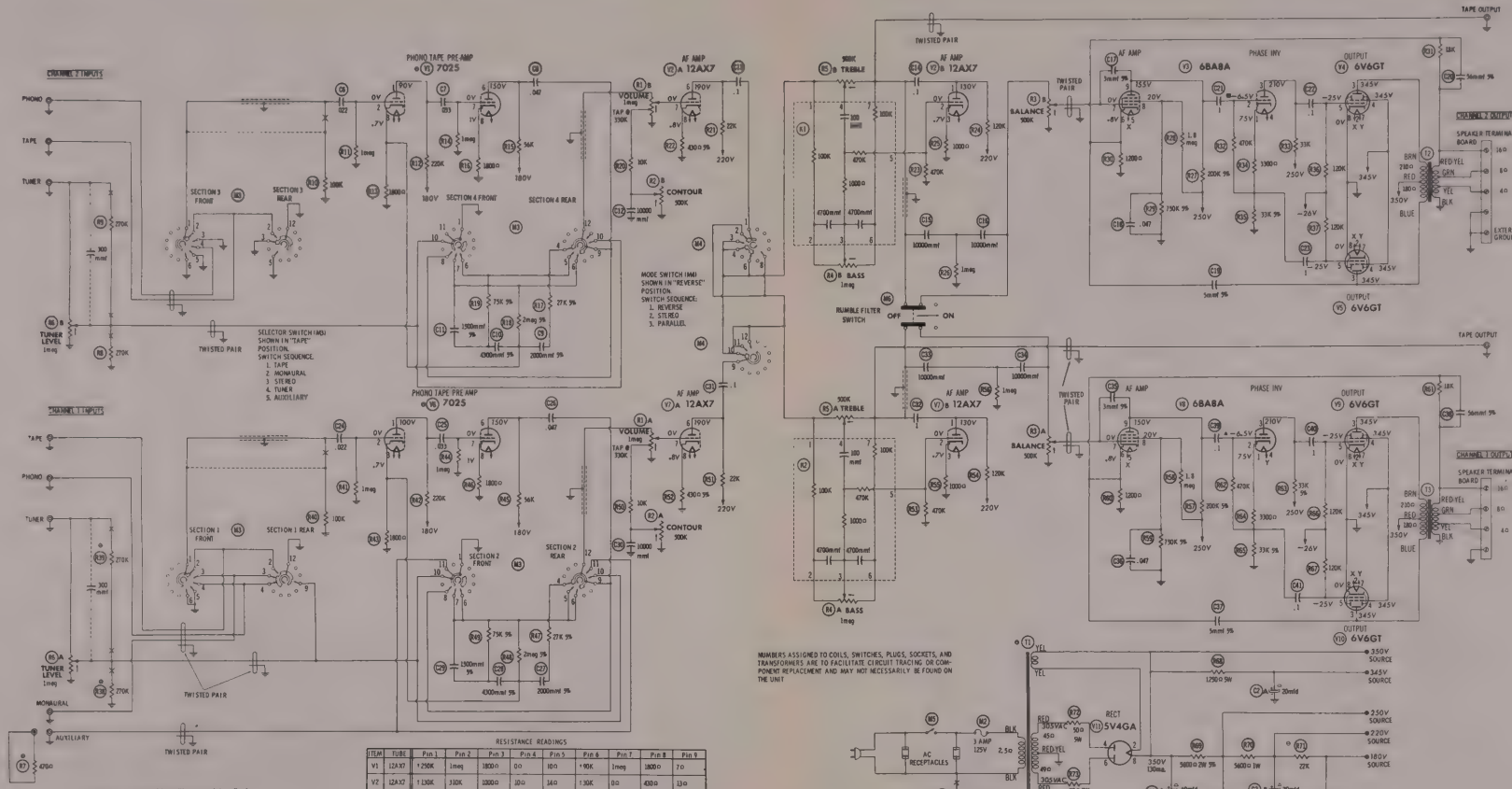
HOWARD W. SAMS & CO., INC. Indianapolis 6, Indiana

The listing of any available replacement part herein does not constitute in any case a recommendation, warranty or guaranty by Howard W. Sams & Co., Inc., as to the quality and suitability of such replacement part. The numbers of these parts have been compiled from information furnished to Howard W. Sams & Co., Inc., by the manufacturers of the particular type of replacement part listed. Reproduction or use, without express permission, of editorial or pictorial content, in any manner, is prohibited. No patent liability is assumed with respect to the use of the information contained herein. © 1959 Howard W. Sams & Co., Inc., Indianapolis 6, Indiana. Printed in U.S. of America

JV124

DATE 10—59 SET 459 FOLDER

CHASSIS-BOTTOM VIEW-RESISTOR IDENTIFICATION



1. DC voltage measurements taken with vacuum tube voltmeter; AC voltages measured at 1,000 ohms per volt
2. Socket connections are shown as bottom views.
3. Measured values are from socket pin to common negative
4. Line voltage maintained at 117 volts for voltage readings
5. Nominal tolerance of component values makes possible a variation of ±15% in voltage and resistance readings
6. All controls at minimum, proper output load connected

● SEE PARTS LIST FOR ALTERNATE VALUE OR APPLICATION

DC COIL RESISTANCE VALUES UNDER ONE OHM NOT SHOWN ON SCHEMATIC DIAGRAM

ARROWS ON CONTROLS INDICATE CLOCKWISE ROTATION (CONTROL VIEWED FROM SHAFT END)

RESISTANCE READINGS

ITEM	TUBE	Pin 1	Pin 2	Pin 3	Pin 4	Pin 5	Pin 6	Pin 7	Pin 8	Pin 9
V1	12AX7	†250K	1meg	1800Ω	0Ω	10Ω	†90K	1meg	1800Ω	7Ω
V2	12AX7	†130K	310K	1000Ω	10Ω	14Ω	†30K	0Ω	430Ω	13Ω
V3	6BA8A	36K	500K	†35K	1Ω	.1Ω	1200Ω	0Ω	†550K	†200K
V4	6V6GT	NC	1Ω	†210Ω	†1250Ω	140K	NC	.1Ω	0Ω	
V5	6V6GT	NC	1Ω	†180Ω	†1250Ω	140K	TP	.1Ω	0Ω	
V6	12AX7	†250K	1meg	1800Ω	0Ω	10Ω	†90K	1meg	1800Ω	7Ω
V7	12AX7	†130K	310K	1000Ω	10Ω	14Ω	†30K	0Ω	430Ω	13Ω
V8	6BA8A	36K	500K	†35K	.1Ω	1Ω	1200Ω	0Ω	†550K	†200K
V9	6V6GT	NC	.1Ω	†210Ω	†1250Ω	140K	NC	.1Ω	0Ω	
V10	6V6GT	NC	1Ω	†180Ω	†1250Ω	140K	TP	.1Ω	0Ω	
V11	5V4GA	NC	1	NC	95Ω	NC	9Ω	NC	1	

† THIS READING WILL VARY DEPENDING UPON THE CONDITION OF THE ELECTROLYTIC IN THE CIRCUIT.
* MEASURED FROM PIN 8 OF V11.
▲ MEASURED FROM PIN 1 OF V3.
▲ MEASURED FROM PIN 1 OF V8.
NC NO CONNECTION
TP TIE POINT

A PHOTOFACT STANDARD NOTATION SCHEMATIC

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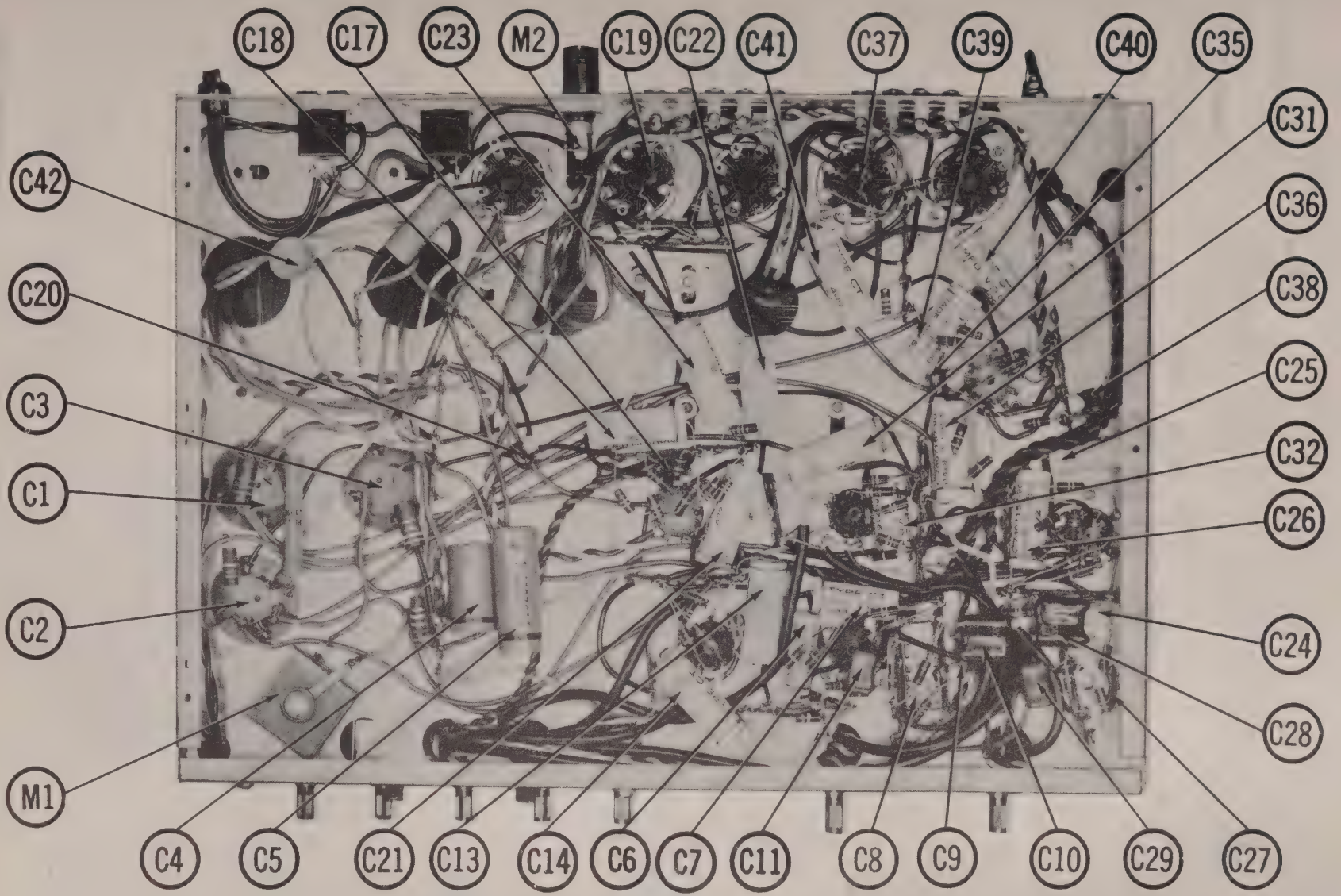
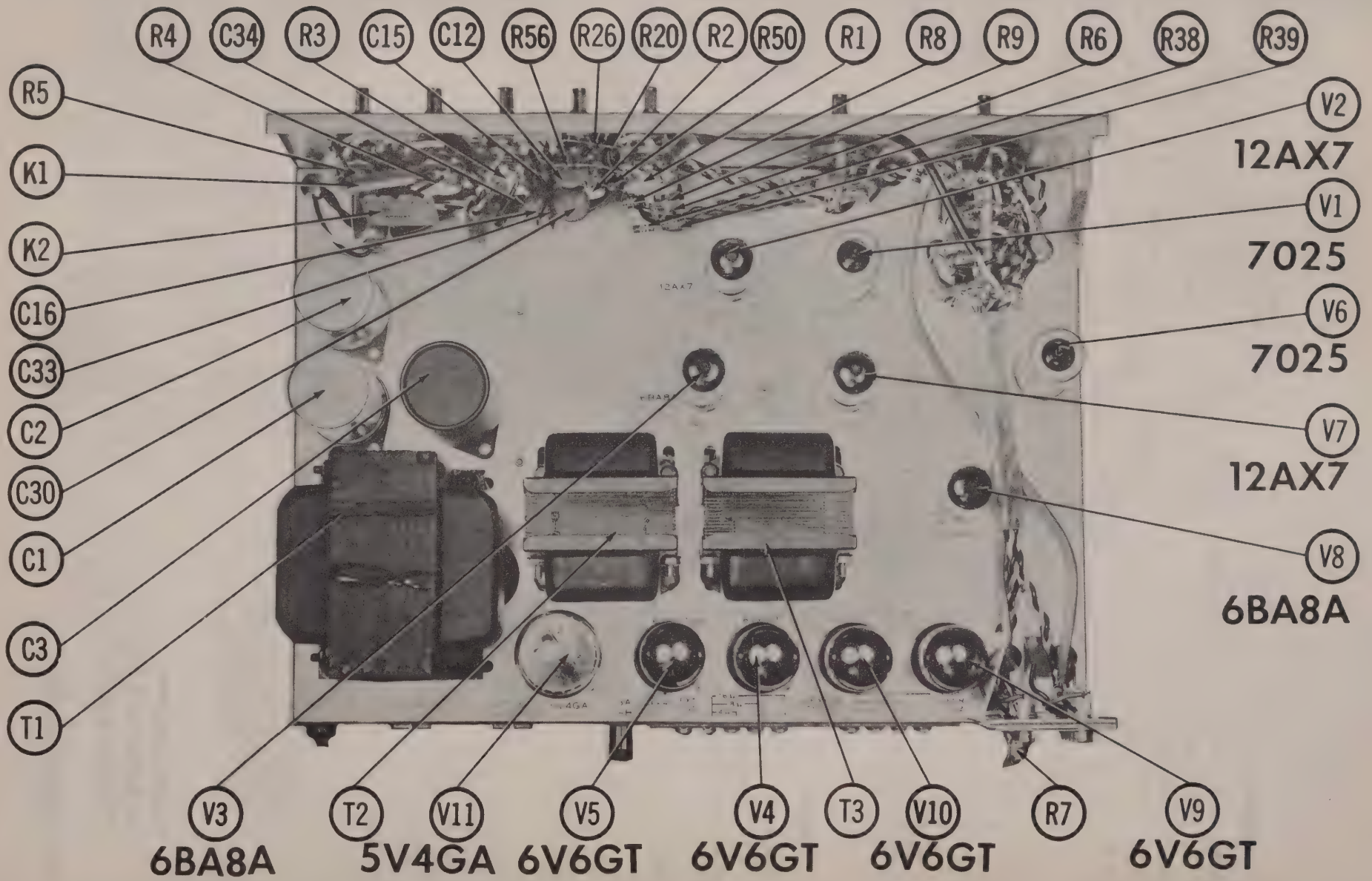
GENERAL ELECTRIC MODELS MS-2000, XMS-2000



CHASSIS-BOTTOM VIEW-CAPACITOR IDENTIFICATION



CHASSIS-TOP VIEW

PARTS LIST AND DESCRIPTIONS

TUBES (GENERAL ELECTRIC, SYLVANIA)

ITEM No.	USE	TYPE	NOTES
V1	Channel 2 Phono-Tape Preamp.	7025	①
V2	Channel 2 AF Amp.	12AX7	
V3	Channel 2 AF Amp. - Phase Inv.	6BA8A	
V4	Channel 2 Output	6V6GT	
V5	Channel 2 Output	6V6GT	

ITEM No.	USE	TYPE	NOTES
V6	Channel 1 Phono-Tape Preamp.	7025	①
V7	Channel 1 AF Amp.	12AX7	
V8	Channel 1 AF Amp. - Phase Inv.	6BA8A	
V9	Channel 1 Output	6V6GT	
V10	Channel 1 Output	6V6GT	
V11	Rect.	5V4GA	

① Alternate 12AX7

ELECTROLYTIC CAPACITORS

ITEM No.	RATING CAP.	RATING VOLT.	REPLACEMENT DATA G. E. PART No.	AEROVOX PART No.	CORNELL-DUBILIER PART No.	MALLORY PART No.	PYRAMID PART No.	SPRAGUE PART No.	NOTES
C1A	▲60	350	ECE-241	AFH2-40-80	B0326	FP239	TMD-56	TVL-2631	
B	▲40	300							
C2A	▲20	350	ECE-242	AFH3-38	C0290	FP396	TMT-46	TVL-3840	
B	▲30	250							
C	■30	250							
C3	1000	30	ECE-237	AFH1-10	A0130	WP059	TMS-11	TVL-1230	
C4	50	30	ECE-238	PRS50V50	BR505	TC39	TD-50-50	TVA-1308	
C5	100	25	ECE-240	PRS25V100	BBR100-25	TC2501	TD-100-25	TVA-1207	

FIXED CAPACITORS

Capacity values given in the rating column are in mfd. for Paper Capacitors, and in mmfd. for Mica and Ceramic Capacitors.

ITEM No.	RATING CAP.	RATING VOLT	RATING TOL	REPLACEMENT DATA G. E. PART No.	AEROVOX PART No.	CENTRALAB PART No.	CORNELL-DUBILIER PART No.	MALLORY PART No.	SPRAGUE PART No.	NOTES
C6	.022	200			P288N-022	DD-203	CUB4S22	GEM-4122	2TM-S22	
C7	.033	400			P488N-033	DF-303	CUB6S33	GEM-4133	6TM-S33	
C8	.047	400			P488N-047	DF-503	CUB4S47	GEM-4147	4TM-S47	
C9	2000		5%	ECG-016	1464-002		5A5D2	MCE-457	MS-22	
C10	4300		5%	ECG-020	1464-0043		1R5D43		MS-243	
C11	1500		5%	ECG-018	1464-0015		1R5D15	MCE456	MS-215	
C12	10000				BPD-01	DD-103	BYA10S1	B-110	5HK-S1	
C13	.1	400			P488N-1	DF-104	CUB4P1	GEM-401	4TM-P1	
C14	.1	400			P488N-1	DF-104	CUB4P1	GEM-401	4TM-P1	
C15	10000				BPD-01	DD-103	BYA10S1	B-110	5HK-S1	
C16	10000				BPD-01	DD-103	BYA10S1	B-110	5HK-S1	
C17	3		5%							
C18	.047	400			P488N-047	DF-503	CUB4S47	GEM-4147	4TM-S47	
C19	5		5%		1469-000005		22R5V5	MCE215	MS-55	
C20	56		5%	ECG-023	1469-000056	TCZ-56	22R5Q56		MS-456	
C21	.1	400			P488N-1	DF-104	CUB4P1	GEM-401	4TM-P1	
C22	.1	400			P488N-1	DF-104	CUB4P1	GEM-401	4TM-P1	
C23	.1	400			P488N-1	DF-104	CUB4P1	GEM-401	4TM-P1	
C24	.022	200			P288N-022	DD-203	CUB4S22	GEM-4122	2TM-S22	
C25	.033	400			P488N-033	DF-303	CUB6S33	GEM-4133	6TM-S33	
C26	.047	400			P488N-047	DF-503	CUB4S47	GEM-4147	4TM-S47	
C27	2000		5%	ECG-016	1464-002		5A5D2	MCE457	MS-22	
C28	4300		5%	ECG-020	1464-0043		1R5D43		MS-243	
C29	1500		5%	ECG-018	1464-0015		1R5D15	MCE456	MS-215	
C30	10000				BPD-01	DD-103	BYA10S1	B-110	5HK-S1	
C31	.1	400			P488N-1	DF-503	CUB4P1	GEM-401	4TM-P1	
C32	.1	400			P488N-1	DF-503	CUB4P1	GEM-401	4TM-P1	
C33	10000				BPD-01	DD-103	BYA10S1	B-110	5HK-S1	
C34	10000				BPD-01	DD-103	BYA10S1	B-110	5HK-S1	
C35	3		5%							
C36	.047	400			P488N-047	DF-503	CUB4S47	GEM-4147	4TM-S47	
C37	5		5%		1469-000005		22R5V5	MCE215	MS-55	
C38	56		5%	ECG-023	1469-000056	TCZ-56	22R5Q56		MS-456	
C39	.1	400			P488N-1	DF-104	CUB4P1	GEM-401	4TM-P1	
C40	.1	400			P488N-1	DF-104	CUB4P1	GEM-401	4TM-P1	
C41	.1	400			P488N-1	DF-104	CUB4P1	GEM-401	4TM-P1	
C42	10000				BPD-01	DD-103	BYA10S1	B-110	5HK-S1	Note 1

Note 1. Not used in some versions.

CONTROLS

ITEM No.	RATING RESISTANCE	RATING WATTS	REPLACEMENT DATA G. E. PART No.	CENTRALAB PART No.	CLAROSTAT PART No.	IRC PART No.	MALLORY PART No.	INSTALLATION NOTES
R1A	1meg	½	ERC-361	BT-71			† UE3968	Volume, Chan 1, Tap @ 330K
B	1meg	½		STR-71				Volume, Chan 2, Tap @ 330K
R2A	500K	½	ERC-362	B-60	AD47-500K-2	Q13-133	†† UE1402	Contour, Chan 1.
B	500K	½		SR-60	Not Req.	M13-133		Contour, Chan 2.
C	Shaft			Not Req.	KSS-3	Not Req		
R3A	500K	½	ERC-363	BR-61		Q17-133	‡ UE3969	Balance, Chan 1.
B	500K	½		SR-60		M13-133		Balance, Chan 2.
R4A	1meg	½	ERC-364	B-69	AD47-1meg-S	Q11-137	‡‡ UE1706	Bass, Chan 1.
B	1meg	½		SR-69	Not Req.	M11-137		Bass, Chan 2.
C	Shaft			Not Req.	KSS-3	Not Req.		
R5A	500K	½	ERC-365	B-59		Q11-133	¶ UE1295	Treble, Chan 1.
B	500K	½		SR-59		M11-133		Treble, Chan 2.
R6A	1meg	½	ERC-366					Tuner Level, Chan 1.
B	1meg	½						Tuner Level, Chan 2.

† "STA-LOC" equivalent: FA16T35, RU16T35, CS3500
†† "STA-LOC" equivalent: FA55A, RU55A, CS3500
‡ "STA-LOC" equivalent: FA55R, RU55A, CS3500
‡‡ "STA-LOC" equivalent: FA16L, RU16L, CS3500
¶ "STA-LOC" equivalent: FA55L, RU55L, CS3500

RESISTORS

All wattages 1/2 watt, or less, unless otherwise listed.

ITEM No.	RATING OHMS	RATING WATT	G. E. PART No.	NOTES
R7	470Ω			Note 1
R8	270K			Note 1
R9	270K			Note 1
R10	100K			
R11	1meg			
R12	220K			
R13	1800Ω			
R14	1meg			
R15	56K			
R16	1800Ω			
R17	27K 5%			
R18	2meg 5%			
R19	75K 5%			
R20	10K			
R21	22K			
R22	430Ω 5%			
R23	470K			
R24	120K			
R25	1000Ω			
R26	1meg			
R27	200K 5%			
R28	1.8meg			
R29	750K 5%			
R30	1200Ω			
R31	18K			
R32	470K			
R33	33K			
R34	3300Ω			
R35	33K 5%			
R36	120K			
R37	120K			
R38	270K			Note 1
R39	270K			Note 1
R40	100K			
R41	1meg			

ITEM No.	RATING OHMS	RATING WATT	G. E. PART No.	NOTES
R42	220K			
R43	1800Ω			
R44	1meg			
R45	56K			
R46	1800Ω			
R47	27K 5%			
R48	2meg 5%			
R49	75K 5%			
R50	10K			
R51	22K			
R52	430Ω 5%			
R53	470K			
R54	120K			
R55	1000Ω			
R56	1meg			
R57	200K 5%			
R58	1.8meg			
R59	750K 5%			
R60	1200Ω			
R61	18K			
R62	470K			
R63	33K 5%			
R64	3300Ω			
R65	33K 5%			
R66	120K			
R67	120K			
R68	1250Ω	5		
R69	5600Ω 5%	2		
R70	5600Ω	1		
R71	22K			Note 3
R72	50Ω	5	ERW-145	
R73	50Ω	5	ERW-145	
R74	18K	1		
R75	6.8Ω 5%	2		Note 2
R76	4.7Ω 5%	2		Note 1

Note 1. Not used in some versions.
Note 2. Some versions may use 25Ω in this application.
Note 3. Some versions may use 15K in this application.

PARTS LIST AND DESCRIPTIONS (Continued)

COMPONENT COMBINATIONS

ITEM No.	USE	DESCRIPTION	G. E. PART No.	REPLACEMENT DATA	
K1	Tone Compensation	4700mmf, 4700mmf, 100mmf, 100K, 100K, 1000Ω, 170K	EEK-010	Centralab Sprague	PC-190 TC-1
K2	Tone Compensation	4700mmf, 4700mmf, 100mmf, 100K, 100K, 1000Ω, 170K	EEK-010	Centralab Sprague	PC-190 TC-1

MISCELLANEOUS

ITEM No.	PART NAME	G. E. PART No.	NOTES
M3	Switch	ESW-116	Selector (5 Position, 4 Gang, Rotary Type)
M4	Switch	ESW-117	Mode (3 Position, Rotary Type)
M5	Switch	ESW-120	Power-On-Off (DPDT, Slide Type)
M6	Switch	ESW-118	Rumble (Slide Type)

TRANSFORMER (POWER)

ITEM No.	RATING			REPLACEMENT DATA						
	PRI.	SEC. 1	SEC. 2	G. E. PART No.	Halldorson PART No.	Merit PART No.	Ram PART No.	Stancor PART No.	Thordarson PART No.	Triad PART No.
T1	117V ⓐ 1.1A	640 VCT ⓐ .130A	55 VCT ⓐ .320A	ETP-336①						
	SEC. 3	SEC. 4	SEC. 5							
	5V ⓐ 2A	6.3 VCT ⓐ 3.2A								

① Model XMS-2000 (50Ω) uses Part #ETP-337.

CABINETS & CABINET PARTS

(When Ordering Cabinets & Cabinet Parts, Specify Model, Chassis & Color)

NAME	PART NO.	DESCRIPTION
Knob	EDK-552	Large Black With Half Blue Line
Knob	EDK-553	Large Black With Full Blue Line
Knob	EDK-554	Small Black
Cabinet	EAV-1009	

TRANSFORMER (AUDIO OUTPUT)

ITEM No.	IMPEDANCE		REPLACEMENT DATA							NOTES
	PRI.	SEC.	G. E. PART No.	Halldorson PART No.	Merit PART No.	Ram PART No.	Stancor PART No.	Thordarson PART No.	Triad PART No.	
T2	6400Ω CT	16Ω Taps ⓐ 8Ω, 4Ω	ET0-187							
T3	6400Ω CT	16Ω Taps ⓐ 8Ω, 4Ω	ET0-187							

WIRING DATA

General-use Unshielded Hook-up Wire ..... Use BELDEN No. 8530 (Solid) Available in Ten Colors
8524 (Stranded) Available in Ten Colors

Power Cord ..... Use BELDEN No. 1765-B (6 Ft. Length)
1725-K (7½ Ft. Length)

RECTIFIERS

ITEM No.	RATING	REPLACEMENT DATA					NOTES
	CURRENT (Measured)	G. E. PART No.	FEDERAL PART No.	INTERNATIONAL PART No.	SARKES TARZIAN PART No.	SYLVANIA PART No.	
M1	.600A	EER-014			4N33-2C1-RV		

FUSES

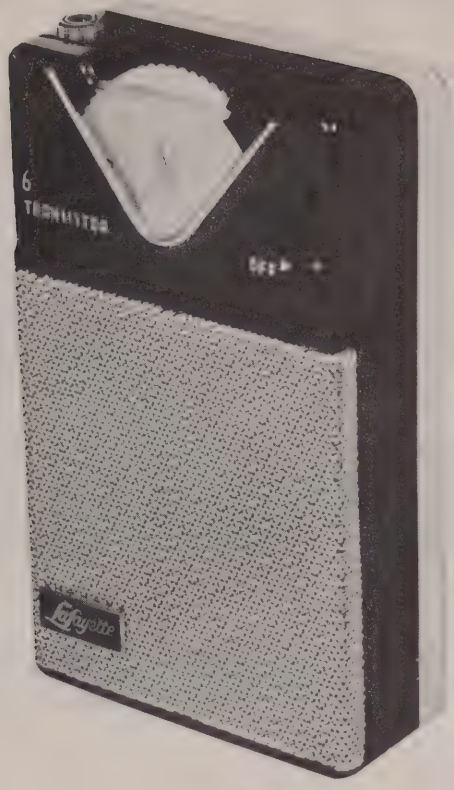
ITEM No.	TYPE	RATING	REPLACEMENT DATA					
			G. E. PART No.		LITTELFUSE PART No.		BUSS PART No.	
			FUSE	HOLDER	FUSE	HOLDER	FUSE	HOLDER
M2	MDX	3A 125V		EJW-004	313003. (3A 125V)	342012	MDX 3	HKP

PHOTOFACT* Folder with CIRCUITRACE*

EIA MEMBER

LAFAYETTE
MODEL FS-112

LAFAYETTE
MODEL FS-112



LAFAYETTE
MODEL FS-112

TRADE NAME	Lafayette Model FS-112
SUPPLIER	Lafayette Radio, 165-08 Liberty Ave., Jamaica 33, N. Y.
TYPE SET	Battery Operated Portable Transistorized AM Receiver
POWER SUPPLY	9 Volts DC
TUNING RANGE—BROADCAST	540 – 1620KC
RATING	6MA@9 Volts DC (No Signal, Min. Volume) 7MA@9 Volts DC (Signal, Normal Volume)

ALIGNMENT INSTRUCTIONS

ALIGNMENT INSTRUCTIONS—READ CAREFULLY BEFORE ATTEMPTING ALIGNMENT

Volume control should be at maximum position. Output of signal generator should be no higher than necessary to obtain an output reading.

Suggested alignment tools:
A1, A2, A3, A6..... GENERAL CEMENT #8607, 9291
WALSCO #2520, 2522, 2523, 2524, 2537
A4, A5..... GENERAL CEMENT #5000, 5003, 8276, 8290
WALSCO #2512, 2525

	DUMMY ANTENNA	SIGNAL GENERATOR COUPLING	SIGNAL GENERATOR FREQUENCY	RADIO DIAL SETTING	OUTPUT METER	ADJUST	REMARKS
1.		Loop	455KC (400∿ Mod.)	Tuning gang fully open	Across voice coil	A1, A2, A3	Fashion loop of several turns of wire and radiate signal into loop of receiver. Adjust for maximum output.
2.		"	1620KC	"	"	A4, A5	"
3.		"	600KC	600KC	"	A6	Adjust for maximum output while rocking tuning gang.

HOWARD W. SAMS & CO., INC. Indianapolis 6, Indiana

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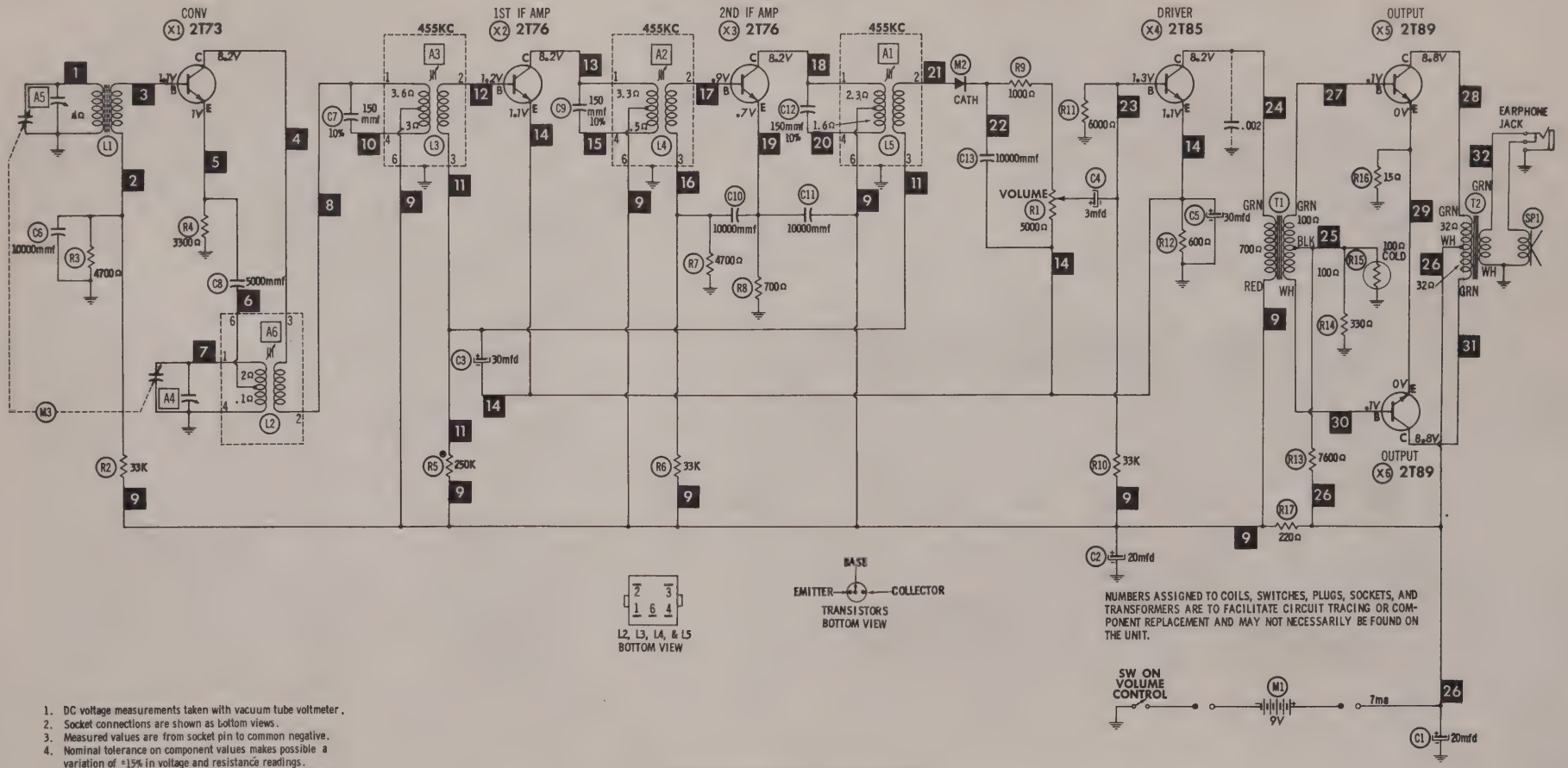
JF297

SET 459 FOLDER 6



NUMBERS ASSIGNED TO COILS, SWITCHES, PLUGS, SOCKETS, AND TRANSFORMERS ARE TO FACILITATE CIRCUIT TRACING OR COMPONENT REPLACEMENT AND MAY NOT NECESSARILY BE FOUND ON THE UNIT.

1. DC voltage measurements taken with vacuum tube voltmeter.
2. Socket connections are shown as bottom views.
3. Measured values are from socket pin to common negative.
4. Nominal tolerance on component values makes possible a variation of ±15% in voltage and resistance readings.
5. Volume control at maximum, no signal applied for voltage measurements.

RESISTANCE MEASUREMENTS NOT GIVEN BECAUSE OF THE WIDE VARIATION IN INTERNAL TRANSISTOR RESISTANCE.

Θ SEE PARTS LIST FOR ALTERNATE VALUE OR APPLICATION

DC COIL RESISTANCE VALUES UNDER ONE OHM NOT SHOWN ON SCHEMATIC DIAGRAM

A PHOTOFACT STANDARD NOTATION SCHEMATIC
with CIRCUITRACE®

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LAFAYETTE
MODEL FS-112

PARTS LIST AND DESCRIPTIONS

TRANSISTORS

ITEM No.	ORIG. TYPE	USE	REPLACEMENT DATA				NOTES
			CBS PART No.	RCA PART No.	RAYTHEON PART No.	SYLVANIA PART No.	
X1	2T73	Converter					NPN
X2	2T76	1st IF Amplifier					NPN
X3	2T76	2nd IF Amplifier					NPN
X4	2T85	Driver					NPN
X5	2T89	Output					NPN
X6	2T89	Output					NPN Matched Pair

ELECTROLYTIC CAPACITORS

ITEM No.	RATING		REPLACEMENT DATA						NOTES
	CAP.	VOLT.	LAFAYETTE PART No.	AEROVOX PART No.	CORNELL-DUBILIER PART No.	MALLORY PART No.	PYRAMID PART No.	SPRAGUE PART No.	
C1	20	10		XPP-10020	EC20-15	TT15X20	ML20-15	TE-1130	
C2	20	10		XPP-10020	EC20-15	TT15X20	ML20-15	TE-1130	
C3	30	3		XPP-3030	EC30-6	TT6X30	ML30-6	TE-1092	
C4	3	6		XPP-6003	NLW3-6	TT6X3	ML4-6	TE-1082	
C5	30	3		XPP-3030	EC30-6	TT6X30	ML30-6	TE-1092	

FIXED CAPACITORS

Capacity values given in the rating column are in mfd. for Paper Capacitors, and in mmfd. for Mica and Ceramic Capacitors.

ITEM No.	RATING			REPLACEMENT DATA						NOTES
	CAP.	VOLT	TOL	LAFAYETTE PART No.	AEROVOX PART No.	CENTRALAB PART No.	CORNELL-DUBILIER PART No.	MALLORY PART No.	SPRAGUE PART No.	
C6	10000				BPD-01	DM-103	H-05S1	TA-110	TG-S10	
C7	150		10%		NPO-SI 150	D6-151	L10T15	ZT-5315	5GA-T15S 10%*	
C8	5000				BPD-005	DM-502	H-05D5	TA-250	TG-D50	
C9	150		10%		NPO-SI 150	D6-151	L10T15	ZT-5315	5GA-T15S 10%*	
C10	10000				BPD-01	DM-103	H-05S1	TA-110	TG-S10	
C11	10000				BPD-01	DM-103	H-05S1	TA-110	TG-S10	
C12	150		10%		NPO-SI 150	D6-151	L10T15	ZT-5315	5GA-T15S 10%*	
C13	10000				BPD-01	DM-103	H-05S1	TA-110	TG-S10	

* Not normally in distributor's stock. Available thru distributor on order to manufacturer.

CONTROLS

ITEM No.	RATING		REPLACEMENT DATA					INSTALLATION NOTES
	RESISTANCE	WATTS	LAFAYETTE PART No.	CENTRALAB PART No.	CLAROSTAT PART No.	IRC PART No.	MALLORY PART No.	
R1	5000Ω	1/4		B16-214				Volume & Switch

RESISTORS

All wattages 1/2 watt, or less, unless otherwise listed.

ITEM No.	RATING	REMARKS
R2	33K	
R3	4700Ω	
R4	3300Ω	
R5	250K	(300K) *
R6	33K	

ITEM No.	RATING	REMARKS
R7	4700Ω	
R8	700Ω	
R9	1000Ω	
R10	33K	
R11	6000Ω	

ITEM No.	RATING	REMARKS
R12	600Ω	
R13	7600Ω	
R14	330Ω	
R15	100Ω Cold	
R16	15Ω	
R17	220Ω	

* Alternate

PRINTED BOARD

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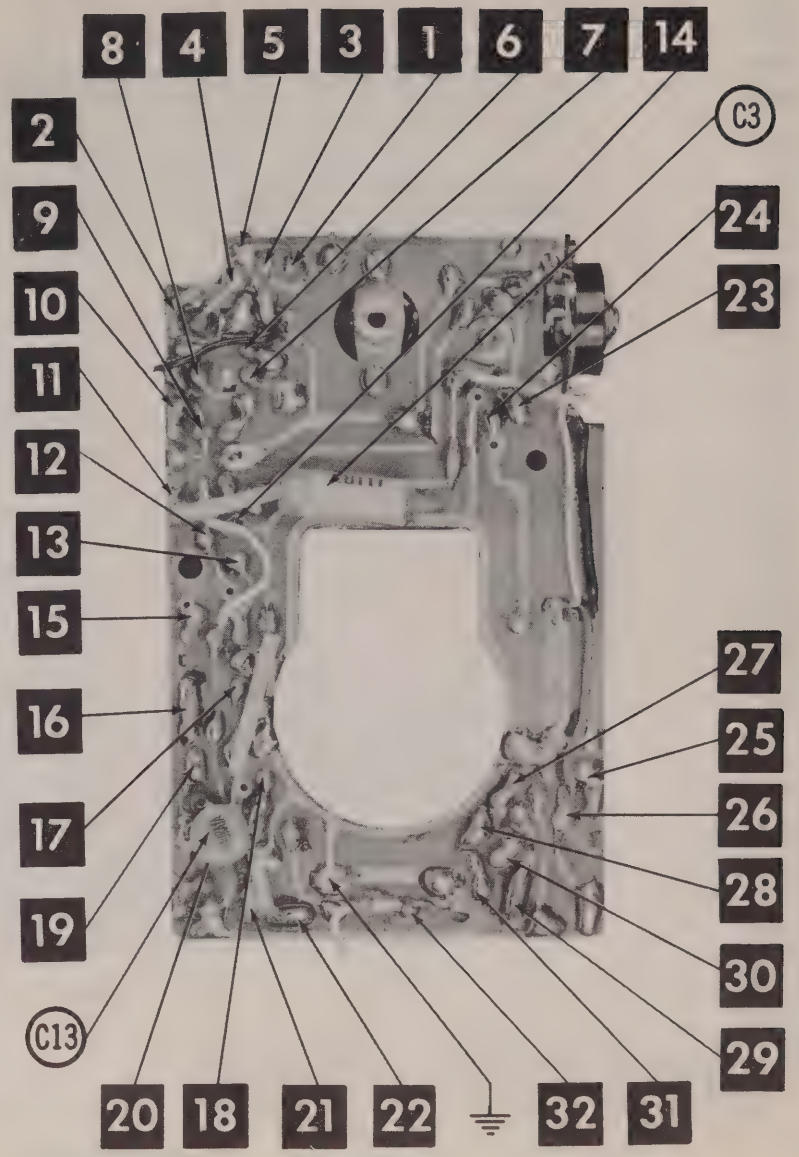


PARTS LIST AND DESCRIPTIONS (Continued)

COILS (RF-IF)

ITEM No.	USE	REPLACEMENT DATA						NOTES
		LAFAYETTE PART No.	Gramer PART No.	Meissner PART No.	Merit PART No.	Miller PART No.	Ram PART No.	
L1	Loopstick							
L2	Osc. Coil							
L3	1st IF Trans.							
L4	2nd IF Trans.							
L5	3rd IF Trans.							

TRANSFORMER (DRIVER)

ITEM No.	TURNS RATIO		REPLACEMENT DATA						NOTES
	PRI.	SEC.	LAFAYETTE PART No.	Halldorson PART No.	Merit PART No.	Stancor PART No.	Thordarson PART No.	Triad PART No.	
T1	1.5	1	R-8202	TR-4		TA-28	TR-4	T-41X	

TRANSFORMER (AUDIO OUTPUT)

ITEM No.	IMPEDANCE		REPLACEMENT DATA							NOTES
	PRI.	SEC.	LAFAYETTE PART No.	Halldorson PART No.	Merit PART No.	Ram PART No.	Stancor PART No.	Thordarson PART No.	Triad PART No.	
T2	300Ω CT	6-8Ω	R-8201							

SPEAKER

ITEM No.	TYPE			REPLACEMENT DATA		NOTES
	SIZE	FIELD	V. C. IMP.	LAFAYETTE PART No.	QUAM PART No.	
SP1	2"	PM	6-8Ω			

BATTERIES

ITEM No.	VOLTAGE	LAFAYETTE PART No.	REPLACEMENT DATA						NOTES
			BURGESS		EVEREADY		MALLORY		
			"A"	"B"	"A"	"B"	"A"	"B"	
M1	9V			2U6		216		TR-146R	

CRYSTAL DIODES

ITEM No.	ORIG. TYPE	REPLACEMENT DATA				NOTES
		LAFAYETTE PART No.	CBS PART No.	RAYTHEON PART No.	SYLVANIA PART No.	
M2			1N60	1N60	1N295	Detector (Pigtail)

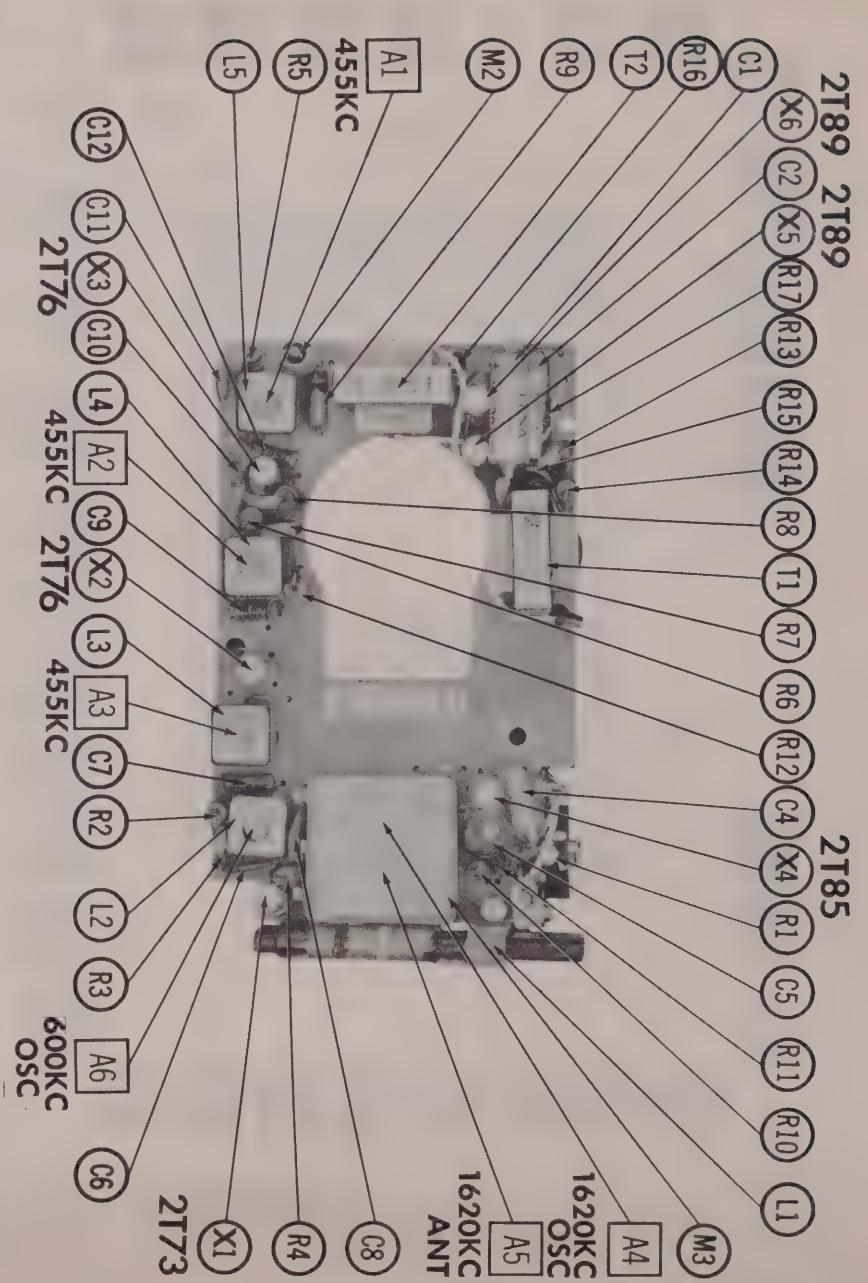
MISCELLANEOUS

ITEM No.	PART NAME	LAFAYETTE PART No.	NOTES
M3	Tuning Cap		2 Gang (Ant. 5.5 —74.5mmf, Osc. 6—77.5mmf)

WIRING DATA

General-use Unshielded Hook-up Wire ..... Use BELDEN No. 8530 (Solid) Available in Ten Colors
8524 (Stranded) Available in Ten Colors

CHASSIS—TOP VIEW



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EIA MEMBER ELECTRONIC INDUSTRIES ASSOCIATION

MAGNAVOX CHASSIS
AMP-179-00, AMP-179-10

MAGNAVOX CHASSIS
AMP-179-00, AMP-179-10

Representative Model
Using Ch. AMP-179

MAGNAVOX CHASSIS
AMP-179-00, AMP-179-10

TRADE NAME	Magnavox Chassis Amp -179-00, Amp -179-10
MANUFACTURER	Magnavox Co., 2131 Bueter Road, Fort Wayne 4, Indiana
TYPE SET	AC Operated 9 Tube Bass - Treble Audio Amplifier
POWER SUPPLY	110 - 120 Volts AC, 60 Cycles RATING 140 Watts, 1.35 Amp. @ 117 Volts AC

HOWARD W. SAMS & CO., INC. Indianapolis 6, Indiana

The listing of any available replacement part herein does not constitute in any case a recommendation, warranty or guaranty by Howard W. Sams & Co., Inc., as to the quality and suitability of such replacement part. The numbers of these parts have been compiled from information furnished to Howard W. Sams & Co., Inc., by the manufacturers of the particular type of replacement part listed. Reproduction or use, without express permission, of editorial or pictorial content, in any manner, is prohibited. No patent liability is assumed with respect to the use of the information contained herein. © 1959 Howard W. Sams & Co., Inc., Indianapolis 6, Indiana. Printed in U.S. of America

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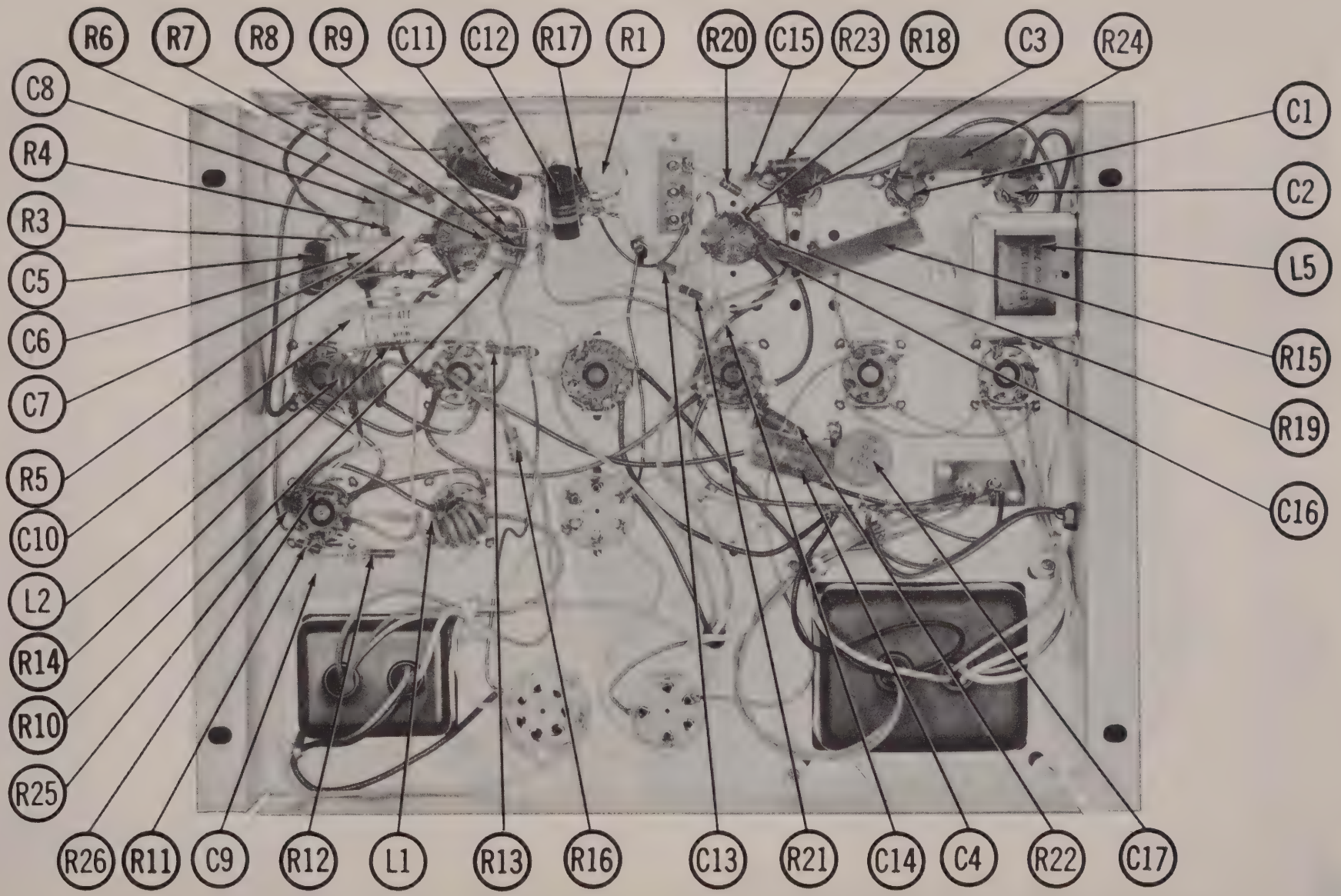


CHASSIS BOTTOM VIEW

PARTS LIST AND DESCRIPTIONS

TUBES

ITEM No.	USE	TYPE	ITEM No.	USE	TYPE
V1	Bass Channel AF Amp. - Bass Channel Phase Inv.	12AT7	V5	Bass Channel Output	6V6GT
V2	Bass Channel Output	6V6GT	V6	Treble Channel AF Amp.	6AT6
V3	Bass Channel Output	6V6GT	V7	Treble Channel Output	6V6GT
V4	Bass Channel Output	6V6GT	V8	Rectifier	5U4GB
			V9	Rectifier	5U4GB

ELECTROLYTIC CAPACITORS

ITEM No.	RATING CAP.	RATING VOLT.	REPLACEMENT DATA MAGNAVOX PART No.	AEROVOX PART No.	CORNELL-DUBILIER PART No.	MALLORY PART No.	PYRAMID PART No.	SPRAGUE PART No.	NOTES
C1A	■30	475	270023-2	AFH3-155-30	B0410	FP259	TMD-51	TVL-2824	
B	▲10	475							
C2A	■30	475	270023-2	AFH3-155-30	B0410	FP259	TMD-51	TVL-2824	
B	▲10	475							
C3A	■30	475	270023-2	AFH3-155-30	B0410	FP259	TMD-51	TVL-2824	
B	▲10	475							
C4	20	25	270027-28	SRE25V20	NLW20-25	TT25X20	ML20-25	TE-1206	

FIXED CAPACITORS

Capacity values given in the rating column are in mfd. for Paper Capacitors, and in mmfd. for Mica and Ceramic Capacitors.

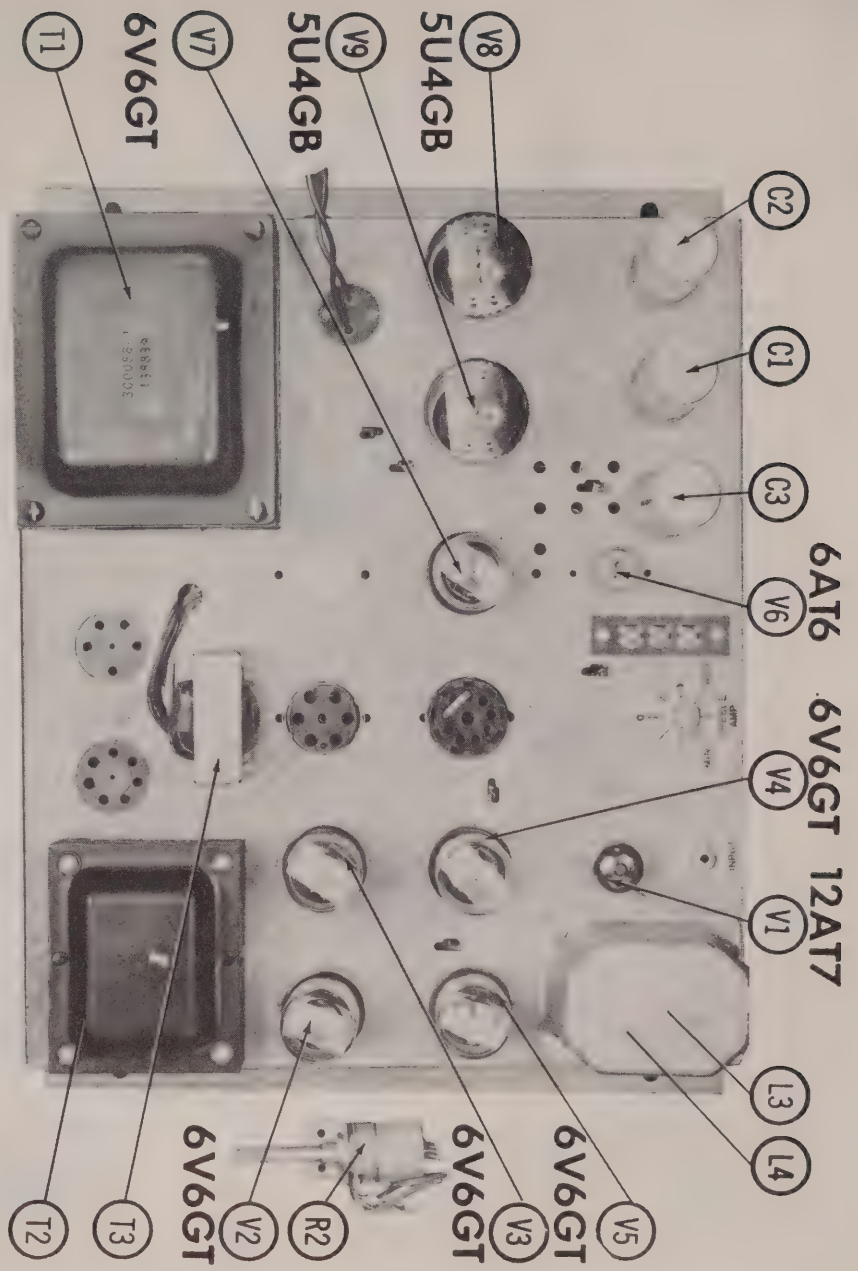
ITEM No.	RATING CAP.	RATING VOLT	RATING TOL	REPLACEMENT DATA MAGNAVOX PART No.	AEROVOX PART No.	CENTRALAB PART No.	CORNELL-DUBILIER PART No.	MALLORY PART No.	SPRAGUE PART No.	NOTES
C5	.033	200		250202-10	P288N-033		PM4S33	GEM-4133	6TM-S33	
C6	.022	200		250202-9	P288N-022	DD-203	CUB4S22	GEM-4122	2TM-S22	
C7	220			250218-5	BPD-00022	DD-221	L10T22	B-322	5GA-T22	
C8	10000			250218-19	BPD-01	DD-103	BYA10S1	B-110	5HK-S1	
C9	.1	600		250202-13	P688N-1	DF-104	CUB6P1	GEM-601	6TM-P1	
C10	.1	600		250201-13	P688N-1	DF-104	CUB6P1	GEM-601	6TM-P1	
C11	.033	200		250202-10	P288N-033		PM4S33	GEM-4133	6TM-S33	
C12	.068	200		250211-6	P288N-068	DD16-702	CUB4S68	GEM-4168	4TM-S68	
C13	220			250218-5	BPD-00022	DD-221	L10T22	B-322	5GA-T22	
C14	10000			250218-19	BPD-01	DD-103	BYA10S1	B-110	5HK-S1	
C15	220			250218-5	BPD-00022	DD-221	L10T22	B-322	5GA-T22	
C16	10000			250218-19	BPD-01	DD-103	BYA10S1	B-110	5HK-S1	
C17A	10000	1500		250219-3	DAC-27	DD16-103	HVE16S1	2HV-110	20HKB-S1	
B	10000	1500			DAC-27	DD16-103	HVE16S1	2HV-110	20HKB-S1	

CONTROLS

ITEM No.	RATING RESISTANCE	RATING WATTS	REPLACEMENT DATA MAGNAVOX PART No.	CENTRALAB PART No.	CLAROSTAT PART No.	IRC PART No.	MALLORY PART No.	INSTALLATION NOTES
R1A	5000Ω	1/2	220126-49	AB-10	A47-5000-S	Q11-114	SU14	Treble Balance
B	Shaft			AK-1	FKS-1/4	Not Req.	Not Req.	
R2A	5000Ω	1/2	220073-25①	B-11		Q13-114	U12	Balance (Remote)
B	Switch			KR-6		76-1	US-26T	
C	Sw.Cover			KR-5				

① Alternate Part #220126-64

CHASSIS—TOP VIEW



PARTS LIST AND DESCRIPTIONS (Continued)

RESISTORS

All wattages 1/2 watt, or less, unless otherwise listed.

ITEM No.	RATING	REMARKS
R3	10K	
R4	2.2meg	Note 1
R5	100K	
R6	220K	
R7	1500Ω	
R8	22K	
R9	220K	
R10	5600Ω	

ITEM No.	RATING	REMARKS
R11	220K	
R12	100Ω	
R13	220K	
R14	100Ω	
R15	125Ω 10W	
R16	15K 1W	Note 2
R17	2200Ω	
R18	150K	

ITEM No.	RATING	REMARKS
R19	1000Ω	
R20	15K	
R21	220K	
R22	270Ω 2W	
R23	8200Ω 1W	
R24	75Ω 10W	
R25	100Ω	
R26	100Ω	

Note 1. Chassis 179-10 uses 220K in this application.
Note 2. Chassis 179-10 uses 39K 1W in this application.

COILS (RF-IF)

ITEM No.	USE	REPLACEMENT DATA						NOTES
		MAGNAVOX PART No.	Gramer PART No.	Meissner PART No.	Merit PART No.	Miller PART No.	Ram PART No.	
L1	RF Choke	360575-1	19-1000	19-1000	BC-561	4602		1uh †
L2	RF Choke	360575-1	19-1000	19-1000	BC-561	4602		1uh †

† 5 Turns of Insulated Wire

CHOKE

ITEM No.	RATINGS			REPLACEMENT DATA						
	CURRENT (Measured)	DC RES.	INDUCTANCE (0 CURRENT 1000 ~)	MAGNAVOX PART No.	Halldorson PART No.	Merit PART No.	Ram PART No.	Stancor PART No.	Thordarson PART No.	Triad PART No.
L3		430Ω	.6 HY	360639-1						
L4		450Ω	.6 HY	360639-1						

FILTER CHOKE

ITEM No.	RATINGS			REPLACEMENT DATA						
	CURRENT (Measured)	DC RES.	INDUCTANCE (0 CURRENT 1000 ~)	MAGNAVOX PART No.	Halldorson PART No.	Merit PART No.	Ram PART No.	Stancor PART No.	Thordarson PART No.	Triad PART No.
L5	.050A	56Ω	1 HY	320041-1	26C41	C-2994	F-804	C-2327	26C41	C-24X

TRANSFORMER (POWER)

ITEM No.	RATING			REPLACEMENT DATA						
	PRI.	SEC. 1	SEC. 2	MAGNAVOX PART No.	Halldorson PART No.	Merit PART No.	Ram PART No.	Stancor PART No.	Thordarson PART No.	Triad PART No.
T1	117V ⓐ 1.35A	600 VCT ⓐ .200A	5V ⓐ 6A	300086-1	26R33	P-3055		P-8167	26R33	R-61BC
	SEC. 3	SEC. 4	SEC. 5							
	6.3V ⓐ 2.9A									

TRANSFORMER (AUDIO OUTPUT)

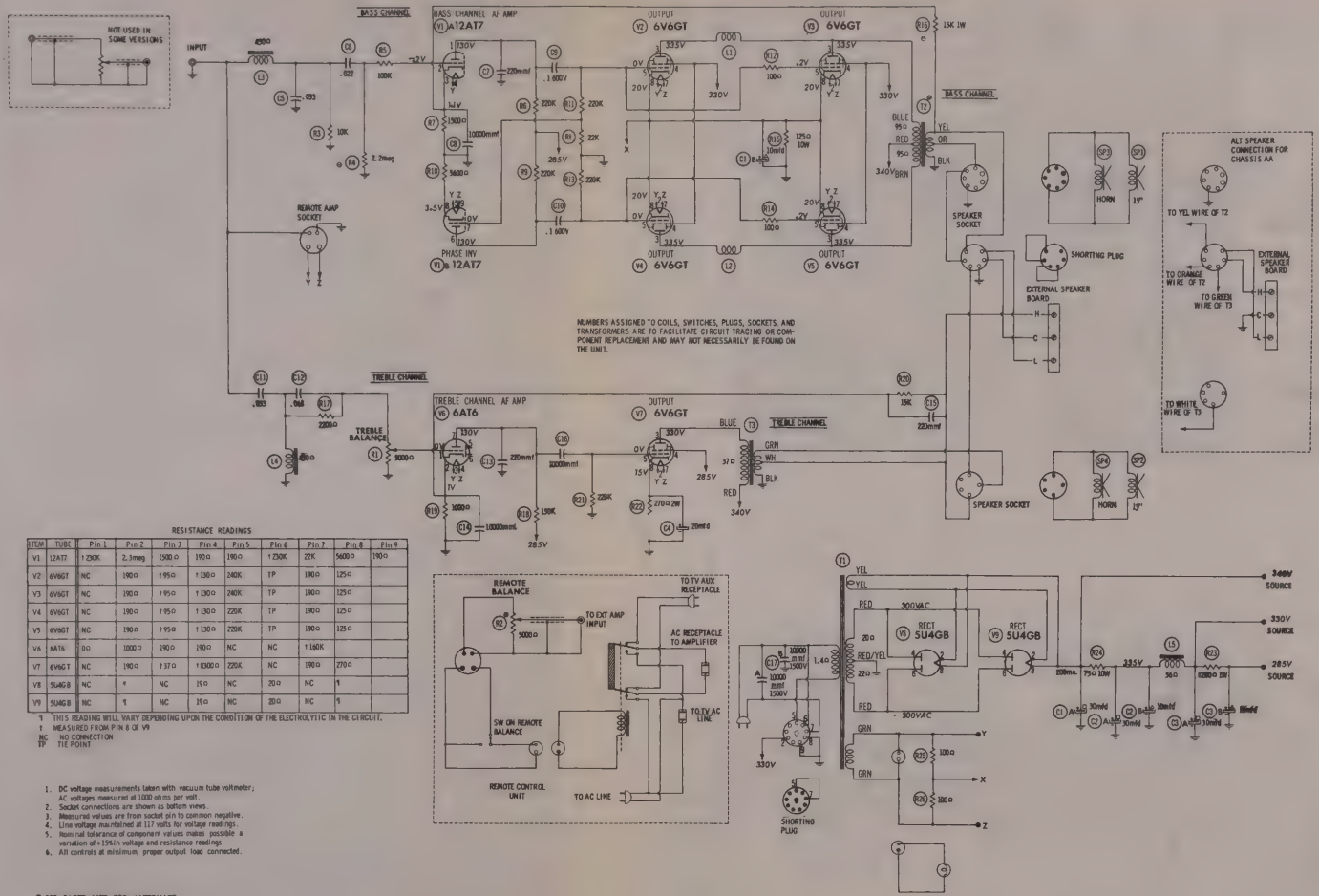
ITEM No.	IMPEDANCE		REPLACEMENT DATA							NOTES
	PRI.	SEC.	MAGNAVOX PART No.	Halldorson PART No.	Merit PART No.	Ram PART No.	Stancor PART No.	Thordarson PART No.	Triad PART No.	
T2	5600Ω CT	4Ω Tap ⓐ 3Ω	330024-1①							① Chassis 179-10 uses Part # 320080-1
T3	2700Ω CT	16Ω Tap ⓐ 8Ω	330042-1							

SPEAKER

ITEM No.	TYPE			REPLACEMENT DATA		NOTES
	SIZE	FIELD	V. C. IMP.	MAGNAVOX PART No.	QUAM PART No.	
SP1	15"	PM	5-6Ω	583975	15A10LZ5.2	
SP2	15"	PM	8-9Ω	583998	15A10LZ8.2	
SP3	Horn	PM	11-12Ω	580053		
SP4	Horn	PM	11-12Ω	580053		

WIRING DATA

General-use Unshielded Hook-up Wire ..... Use BELDEN No. 8530 (Solid) Available in Ten Colors
8524 (Stranded) Available in Ten Colors
Power Cord ..... Use BELDEN No. 1765-B (6 Ft. Length)
1725-K (7½ Ft. Length)



RESISTANCE READINGS

ITEM	TUBE	Pin 1	Pin 2	Pin 3	Pin 4	Pin 5	Pin 6	Pin 7	Pin 8	Pin 9
V1	12AT7	↑ 230K	2.3meg	1500Ω	190Ω	190Ω	↑ 230K	22K	5600Ω	190Ω
V2	6V6GT	NC	190Ω	↑ 95Ω	↑ 130Ω	240K	TP	190Ω	125Ω	
V3	6V6GT	NC	190Ω	↑ 95Ω	↑ 130Ω	240K	TP	190Ω	125Ω	
V4	6V6GT	NC	190Ω	↑ 95Ω	↑ 130Ω	220K	TP	190Ω	125Ω	
V5	6V6GT	NC	190Ω	↑ 95Ω	↑ 130Ω	220K	TP	190Ω	125Ω	
V6	6AT6	0Ω	1000Ω	190Ω	190Ω	NC	NC	↑ 1.6MK		
V7	6V6GT	NC	190Ω	↑ 37Ω	↑ 830Ω	220K	NC	190Ω	270Ω	
V8	5U4GB	NC	¶	NC	19Ω	NC	20Ω	NC	¶	
V9	5U4GB	NC	¶	NC	19Ω	NC	20Ω	NC	¶	

¶ THIS READING WILL VARY DEPENDING UPON THE CONDITION OF THE ELECTROLYTIC IN THE CIRCUIT.
↑ MEASURED FROM PIN 8 OF V9
NC NO CONNECTION
TP TIE POINT

1. DC voltage measurements taken with vacuum tube voltmeter; AC voltages measured at 1000 ohms per volt.
2. Socket connections are shown as bottom views.
3. Measured values are from socket pin to common negative.
4. Line voltage maintained at 117 volts for voltage readings.
5. Nominal tolerance of component values makes possible a variation of ±15% in voltage and resistance readings.
6. All controls at minimum, proper output load connected.

● SEE PARTS LIST FOR ALTERNATE VALUE OR APPLICATION

DC COIL RESISTANCE VALUES UNDER ONE OHM NOT SHOWN ON SCHEMATIC DIAGRAM

A PHOTOFACT STANDARD NOTATION SCHEMATIC
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MAGNAVOX CHASSIS AMP-179-00, AMP-179-10

PHOTOFACT* Folder with CIRCUITRACE*

EIA MEMBER ELECTRONIC INDUSTRIES ASSOCIATION

MOTOROLA MODELS 8X26E, S (Ch. HS-679)

MOTOROLA MODELS
8X26E, S (Ch. HS-679)

MODEL 8K26E

MOTOROLA MODELS
8X26E, S (Ch. HS-679)

TRADE NAME	Motorola Model 8X26E, 8X26S (CH HS-679)
MANUFACTURER	Motorola Inc., 4545 W. Augusta Blvd. Chicago 51, Illinois
TYPE SET	Battery Operated Portable Transistorized AM Receiver
POWER SUPPLY	6 Volts DC
RATING	18MA @ 9 Volts DC (No Signal, Min Volume) 20MA @ 9 Volts DC (Signal, Normal Volume)
TUNING RANGE—BROADCAST	535KC — 1620KC

ALIGNMENT INSTRUCTIONS

ALIGNMENT INSTRUCTIONS—READ CAREFULLY BEFORE ATTEMPTING ALIGNMENT

Volume control should be at maximum position. Output of signal generator should be no higher than necessary to obtain an output reading.

Suggested alignment tools: A1, A2, A3, A7, A8, A9.....GENERAL CEMENT #8282, 8606, 8606L, 9091
WALSCO #2526, 2541, 2543, 2544
A4, A5, A6.....GENERAL CEMENT #5004, 5008, 5009
WALSCO #2520

	DUMMY ANTENNA	SIGNAL GENERATOR COUPLING	SIGNAL GENERATOR FREQUENCY	RADIO DIAL SETTING	OUTPUT METER	ADJUST	REMARKS
1.	.1mfd	High side thru .1mfd to antenna lug of tuning gang. Low side to chassis.	455KC (400~ Mod.)	Tuning gang fully open	Across voice coil	A1, A2, A3	Adjust for maximum output.
2.		Loop	1620KC	"	"	A4	Fashion loop of several turns of wire and radiate signal into loop of receiver. Adjust for maximum output.
3.		"	1400KC	Tune to 1400KC Signal	"	A5, A6	Adjust for maximum output.
4.		"	600KC	600KC	"	A7, A8, A9	Adjust for maximum output. Repeat Steps 2 & 3.

HOWARD W. SAMS & CO., INC. Indianapolis 6, Indiana

The listing of any available replacement part herein does not constitute in any case a recommendation, warranty or guaranty by Howard W. Sams & Co., Inc., as to the quality and suitability of such replacement part. The numbers of these parts have been compiled from information furnished to Howard W. Sams & Co., Inc., by the manufacturers of JF247

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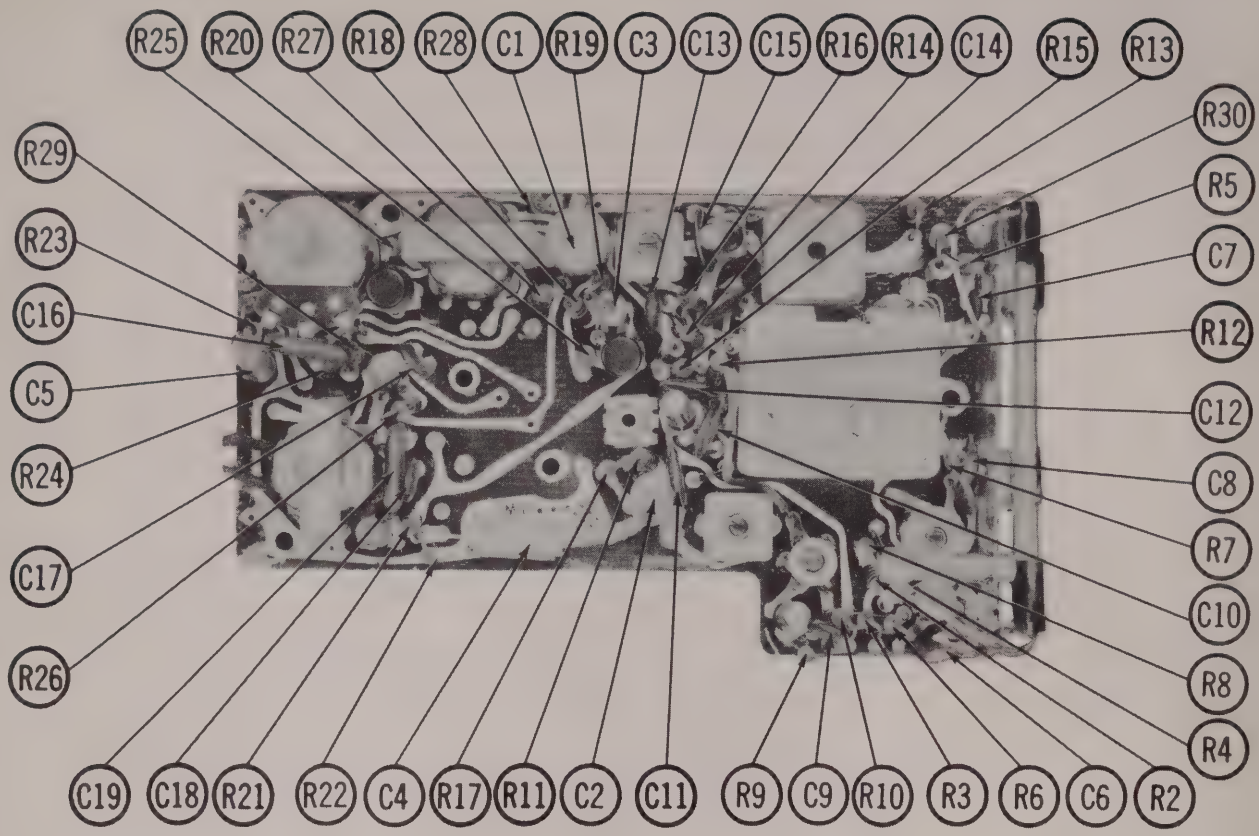
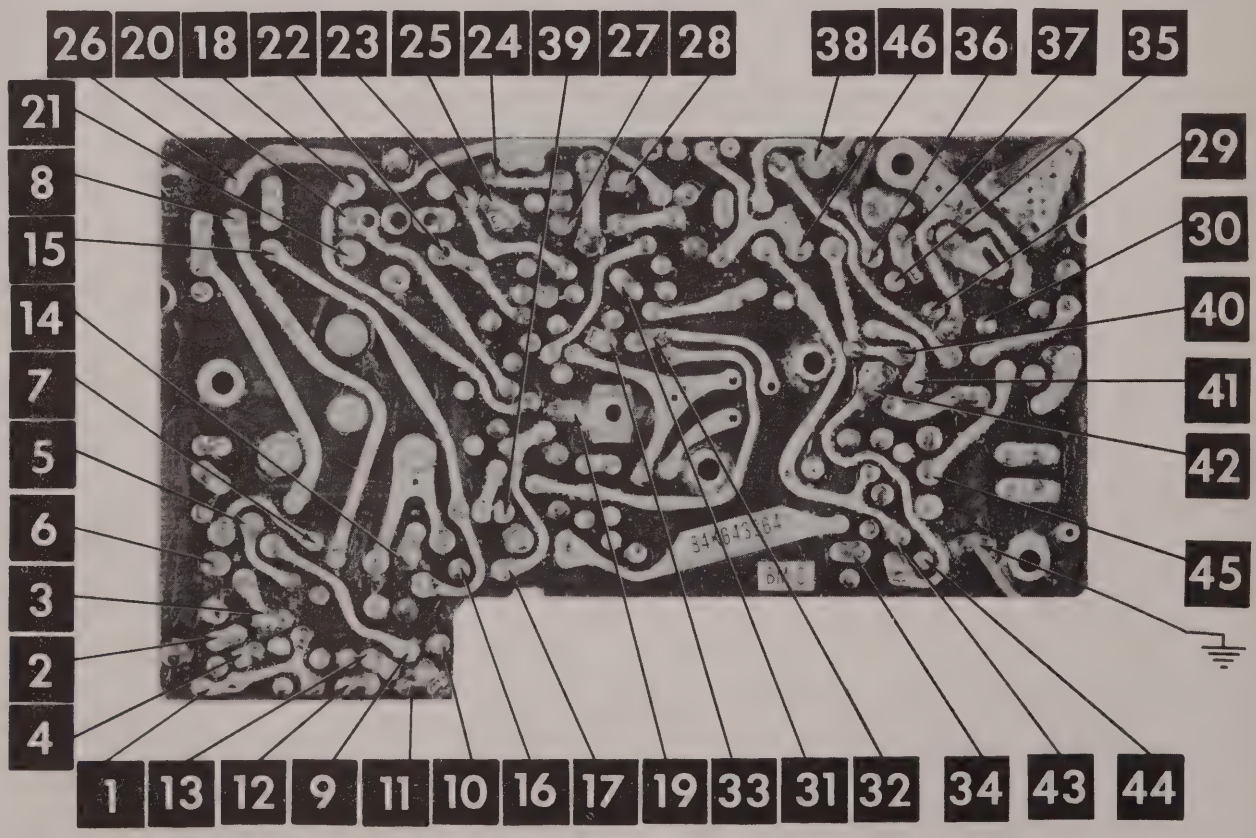


PRINTED BOARD - CAPACITOR & RESISTOR IDENT.



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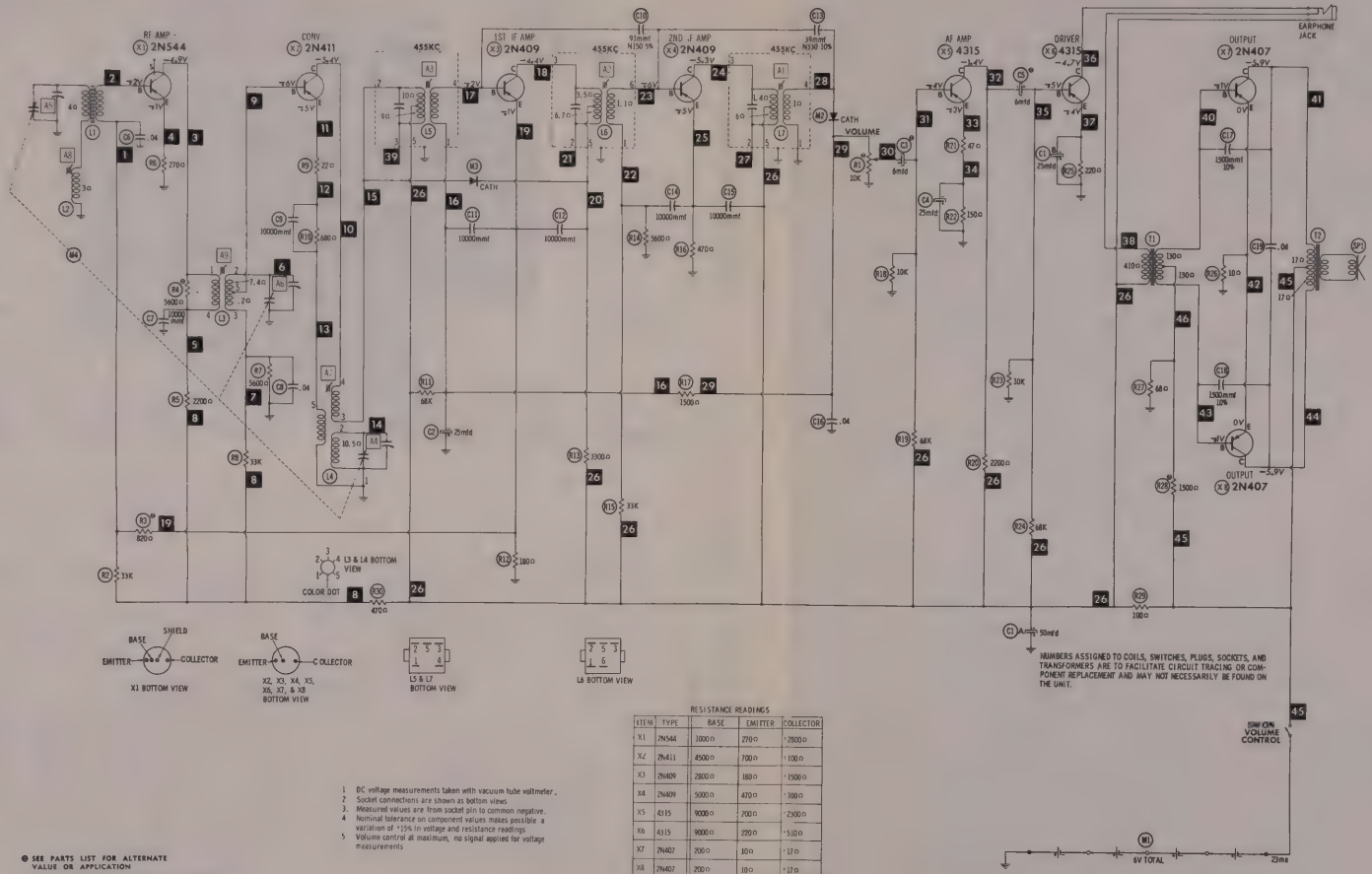
PRINTED BOARD



NUMBERS ASSIGNED TO COILS, SWITCHES, PLUGS, SOCKETS, AND TRANSFORMERS ARE TO FACILITATE CIRCUIT TRACING OR COMPONENT REPLACEMENT AND MAY NOT NECESSARILY BE FOUND ON THE UNIT.

RESISTANCE READINGS

ITEM	TYPE	BASE	EMITTER	COLLECTOR
X1	2N544	1000Ω	270Ω	†2800Ω
X2	2N411	4500Ω	700Ω	†100Ω
X3	2N409	2800Ω	180Ω	†1500Ω
X4	2N409	5000Ω	470Ω	†300Ω
X5	4315	9000Ω	200Ω	†2300Ω
X6	4315	9000Ω	220Ω	†510Ω
X7	2N407	200Ω	10Ω	†17Ω
X8	2N407	200Ω	10Ω	†17Ω

TRANSISTORS REMOVED FOR RESISTANCE MEASUREMENTS.
† MEASURED FROM JUNCTION OF R28 AND R29.

1. DC voltage measurements taken with vacuum tube voltmeter.
2. Socket connections are shown as bottom views.
3. Measured values are from socket pin to common negative.
4. Nominal tolerance on component values makes possible a variation of ±15% in voltage and resistance readings.
5. Volume control at maximum, no signal applied for voltage measurements.

● SEE PARTS LIST FOR ALTERNATE VALUE OR APPLICATION

DC COIL RESISTANCE VALUES UNDER ONE OHM NOT SHOWN ON SCHEMATIC DIAGRAM

A PHOTOFACT STANDARD NOTATION SCHEMATIC with CIRCUITRACE

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MOTOROLA MODELS 8X26E, S (Ch. HS-679)

PARTS LIST AND DESCRIPTIONS

TRANSISTORS

ITEM No.	ORIG. TYPE	USE	REPLACEMENT DATA				NOTES
			CBS PART No.	RCA PART No.	RAYTHEON PART No.	SYLVANIA PART No.	
X1	2N544	RF Amplifier		2N544		2N544	PNP
X2	2N411	Converter		2N411		2N411	PNP
X3	2N409	1st IF Amplifier		2N409		2N409	PNP
X4	2N409	2nd IF Amplifier		2N409		2N409	PNP
X5	4315	AF Amplifier		4315			PNP
X6	4315	Driver		4315			PNP
X7	2N407	Output		2N407		2N407	PNP Matched Pair
X8	2N407	Output		2N407		2N407	PNP

ELECTROLYTIC CAPACITORS

ITEM No.	RATING		REPLACEMENT DATA						NOTES
	CAP.	VOLT.	MOTOROLA PART No.	AEROVOX PART No.	CORNELL-DUBILIER PART No.	MALLORY PART No.	PYRAMID PART No.	SPRAGUE PART No.	
C1A	50	10	23B639917	BCD10X5030		PET2365		VLS-2245 *	
B	25	10							
C2	25	10	23K642709	PWE-10025	NLW25-10	TT10X25	ML20-15	TE-1118	
C3	6	10	23K642111 ①	XPP-10006	NLW6-25	TT12X5	ML6-15	TE-1127.1	
C4	25	10	23K642709	PWE-10025	NLW25-10	TT10X25	ML20-15	TE-1118	
C5	6	10	23K642111 ①	XPP-10006	NLW6-25	TT12X5	ML6-15	TE-1127.1	

* Not normally in distributor's stock. Available thru distributor on order to manufacturer.
① Alternate Part #23K636769.

FIXED CAPACITORS

Capacity values given in the rating column are in mfd. for Paper Capacitors, and in mmfd. for Mica and Ceramic Capacitors.

ITEM No.	RATING			REPLACEMENT DATA						NOTES
	CAP.	VOLT	TOL	MOTOROLA PART No.	AEROVOX PART No.	CENTRALAB PART No.	CORNELL-DUBILIER PART No.	MALLORY PART No.	SPRAGUE PART No.	
C6	.04	50		8R129358	P285N-04	DF-403	CUB6S4	GEM-414	4TM-S4	
C7	10000			21K636724	BPD-01	DD-103	BYA10S1	B-110	5HK-S1	
C8	.04	50		8R129358	P285N-04	DF-403	CUB6S4	GEM-414	4TM-S4	
C9	10000			21K636724	BPD-01	DD-103	BYA10S1	B-110	5HK-S1	
C10	91		N150 5%	21R128601						
C11	10000			21K640366	BPD-01	DD-103	BYA10S1	B-110	5HK-S1	
C12	10000			21K640366	BPD-01	DD-103	BYA10S1	B-110	5HK-S1	
C13	39		N330 10%	21R128600						
C14	10000			21K640366	BPD-01	DD-103	BYA10S1	B-110	5HK-S1	
C15	10000			21K640366	BPD-01	DD-103	BYA10S1	B-110	5HK-S1	
C16	.04	50		8R129358	P288N-04	DF-403	CUB6S4	GEM-414	4TM-S4	
C17	1500		10%	21K129402	DI 1500		PM6D15	JL-215	5GA-D15S 10%*	
C18	1500		10%	21K129402	DI 1500		PM6D15	JL-215	5GA-D15S 10%*	
C19	.04	50		8R129440	P288N-04	DF-403	CUB6S4	GEM-414	4TM-S4	

* Not normally in distributor's stock. Available thru distributor on order to manufacturer.

CONTROLS

ITEM No.	RATING		REPLACEMENT DATA					INSTALLATION NOTES
	RESISTANCE	WATTS	MOTOROLA PART No.	CENTRALAB PART No.	CLAROSTAT PART No.	IRC PART No.	MALLORY PART No.	
R1	10K	1/2	18B641628					Volume & Switch Note 1

Note 1. Some versions may use Part #18B641627.

RESISTORS

All wattages 1/2 watt, or less, unless otherwise listed.

ITEM No.	RATING	REMARKS
R2	33K	
R3	820Ω	(15K) *
R4	5600Ω	(1500Ω) *
R5	2200Ω	
R6	270Ω	
R7	5600Ω	
R8	33K	
R9	22Ω	
R10	680Ω	
R11	68K	

ITEM No.	RATING	REMARKS
R12	180Ω	
R13	3300Ω	
R14	5600Ω	
R15	33K	
R16	470Ω	
R17	1500Ω	
R18	10K	
R19	68K	
R20	2200Ω	
R21	47Ω	

ITEM No.	RATING	REMARKS
R22	150Ω	
R23	10K	
R24	68K	
R25	220Ω	
R26	10Ω	
R27	68Ω	
R28	1500Ω	(Use 2700Ω)
R29	100Ω	
R30	470Ω	

* Alternate.

COILS (RF-IF)

ITEM No.	USE	REPLACEMENT DATA						NOTES
		MOTOROLA PART No.	Gramer PART No.	Meissner PART No.	Merit PART No.	Miller PART No.	Ram PART No.	
L1	Loopstick	1V643294 †						
L2	Ant. Coil	24B642772						
L3	RF Coil	24C641760						
L4	Osc. Coil	24K641378						
L5	1st IF	24K643211						
L6	2nd IF	24D642133						
L7	3rd IF	24K641756						

† Includes Antenna Shields & Mtg. Clamps.

TRANSFORMER (DRIVER)

ITEM No.	TURNS RATIO		REPLACEMENT DATA						NOTES
	PRI.	SEC.	MOTOROLA PART No.	Halldorson PART No.	Merit PART No.	Stancor PART No.	Thordarson PART No.	Triad PART No.	
T1	1.5	1	25B641394						

PARTS LIST AND DESCRIPTIONS (Continued)

TRANSFORMER (AUDIO OUTPUT)

ITEM No.	IMPEDANCE		REPLACEMENT DATA							NOTES
	PRI.	SEC.	MOTOROLA PART No.	Halldorson PART No.	Merit PART No.	Ram PART No.	Stancor PART No.	Thordarson PART No.	Triad PART No.	
T2	275Ω CT	3-4Ω	25B641395						TY-57X ①	① Use Original Channel Frame

SPEAKER

ITEM No.	TYPE			REPLACEMENT DATA		NOTES
	SIZE	FIELD	V. C. IMP.	MOTOROLA PART No.	QUAM PART No.	
SP1	3½"	PM	3-4Ω	50B641629	3A07	

BATTERIES

ITEM No.	VOLTAGE	MOTOROLA PART No.	REPLACEMENT DATA						NOTES
			BURGESS		EVEREADY		MALLORY		
			"A"	"B"	"A"	"B"	"A"	"B"	
M1	6V			930 ①		1015① E9①②		M-15R① ZM9①②	① 4 Used ② Mercury Type

CRYSTAL DIODES

ITEM No.	ORIG. TYPE	REPLACEMENT DATA				NOTES
		MOTOROLA PART No.	CBS PART No.	RAYTHEON PART No.	SYLVANIA PART No.	
M2		48K640754	1N60	1N60	1N60	Detector (Pigtail)
M3		48K640754	1N60	1N60	1N60	Overload (Pigtail)

MISCELLANEOUS

ITEM No.	PART NAME	MOTOROLA PART No.	NOTES
M4	Tuning Cap	19B641384	3 Gang (Ant. 22—330mmf, RF. 12—182mmf, Osc. 20—83mmf) Complete
	Battery Holder	1V642777	
	Printed Board	84K643264	

CABINETS & CABINET PARTS

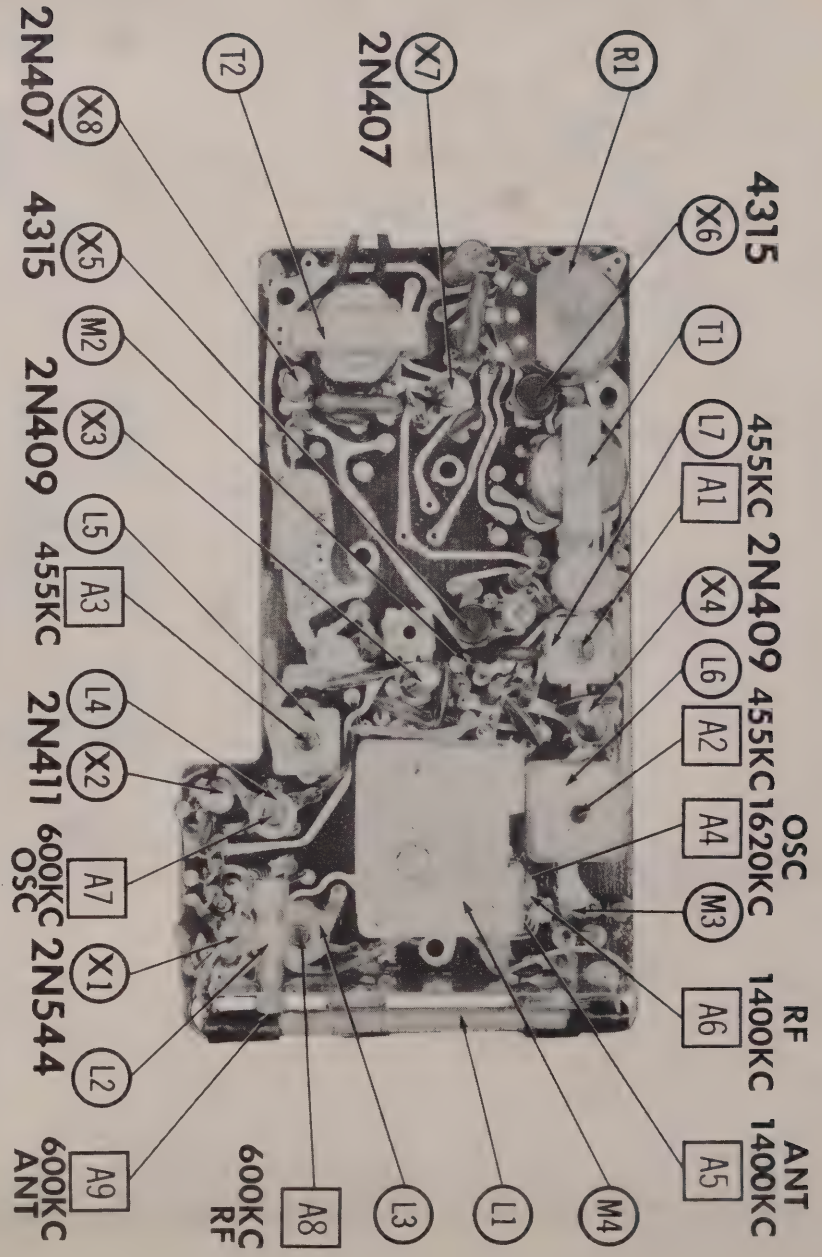
(When Ordering Cabinets & Cabinet Parts, Specify Model, Chassis & Color)

NAME	PART NO.	DESCRIPTION
Knob	36C641723	Tuning
Knob	36K641717	Volume-On-Off
Knob	52B641719	Pointer
Cabinet Front	16E641722	Charcoal, Model 8X26E
Cabinet Front	16K642686	Maple Sugar, Model 8X26S
Cabinet Back	1V642791	Charcoal, Model 8X26E
Cabinet Back	1V642792	Maple Sugar, Model 8X26S
Handle	55C641724	

WIRING DATA

General-use Unshielded Hook-up Wire .....Use BELDEN No. 8530 (Solid) Available in Ten Colors
8524 (Stranded) Available in Ten Colors

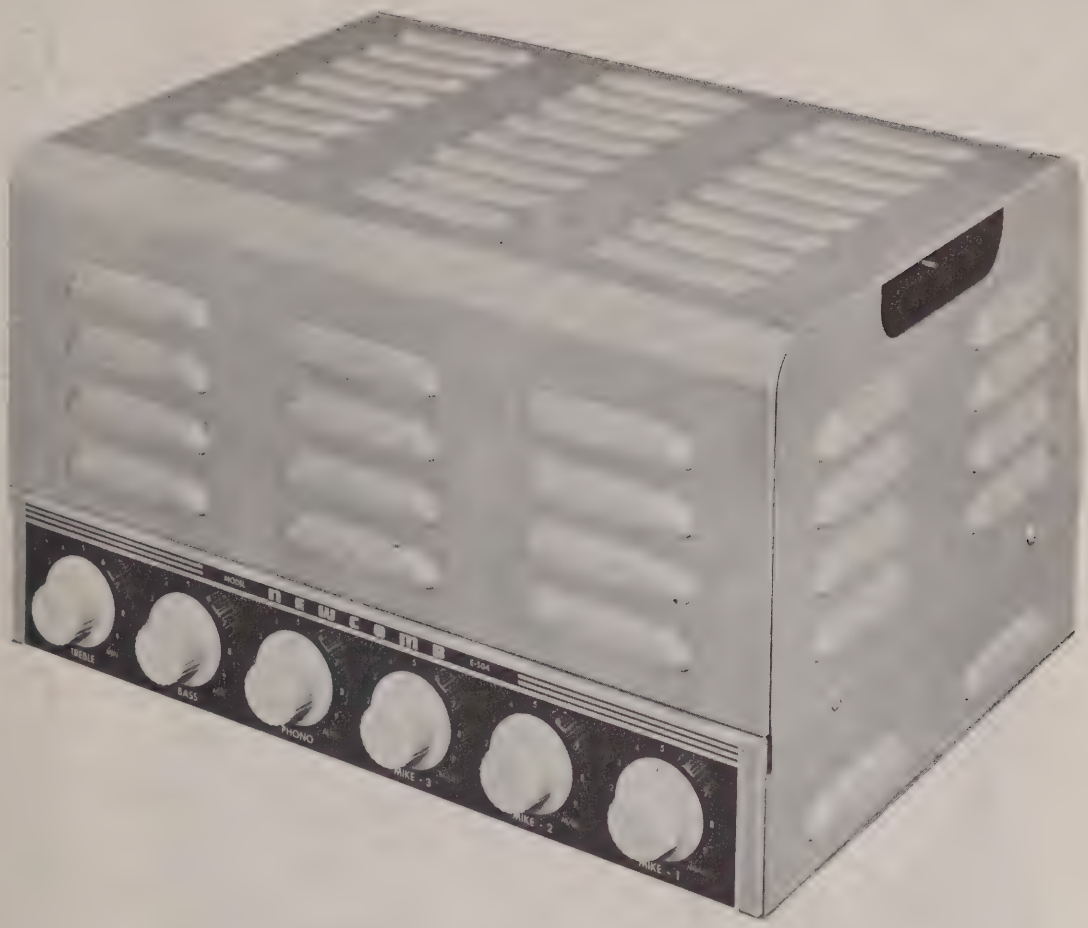
CHASSIS—TOP VIEW



PHOTOFACT* Folder

NEWCOMB
MODEL E-504

NEWCOMB
MODEL E-504



NEWCOMB
MODEL E-504

TRADE NAME	Newcomb Model E-504
MANUFACTURER	Newcomb Audio Products Co., 6824 Lexington Ave., Hollywood 38, California
TYPE SET	AC Operated 11 Tube 4 Channel Audio Amplifier
POWER SUPPLY	110-120 Volts AC, 60 Cycles RATING 190 Watts, 1.8 Amp. @117 Volts AC

HOWARD W. SAMS & CO., INC. Indianapolis 6, Indiana

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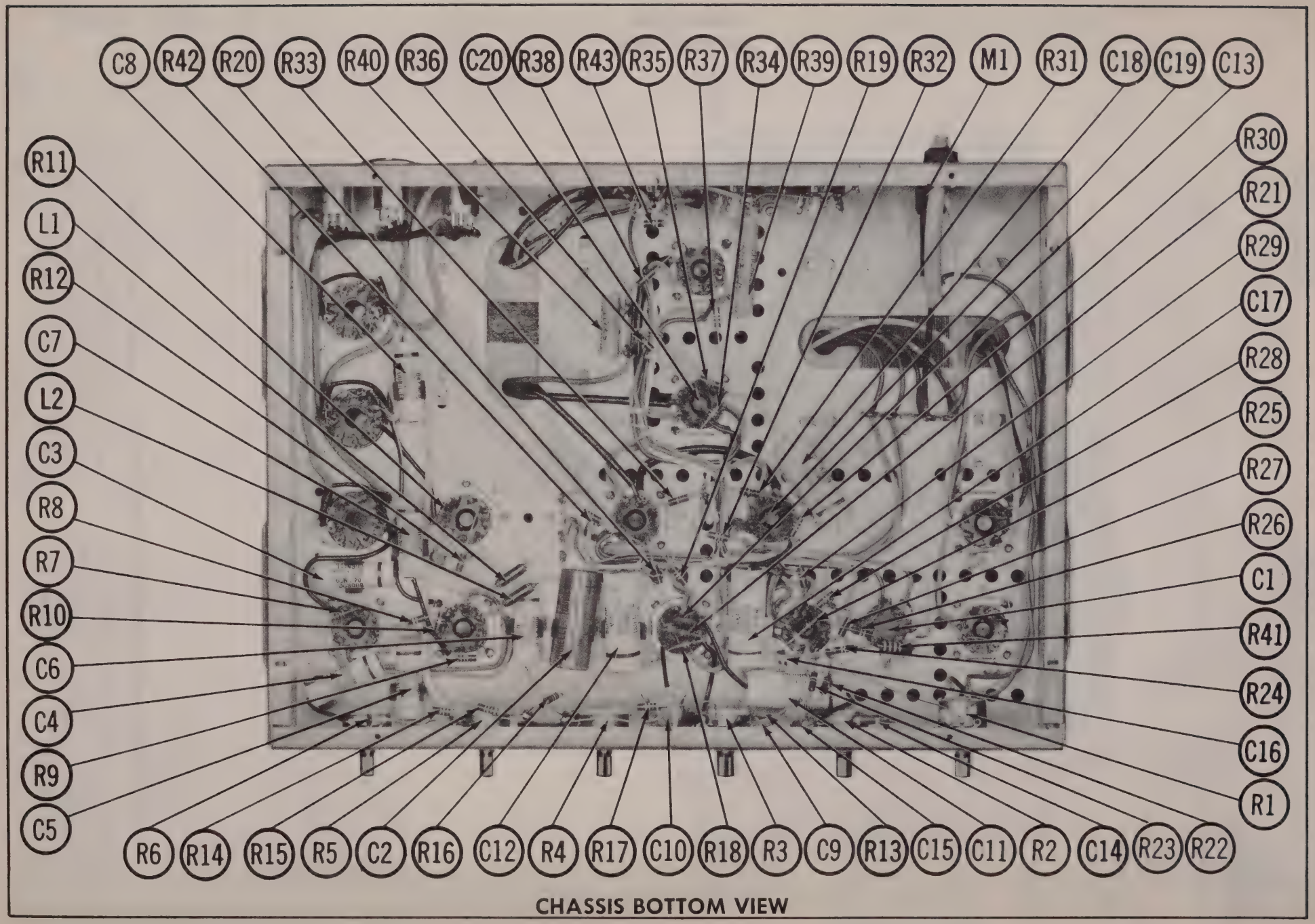
JX196

SET 459 FOLDER 9



CHASSIS BOTTOM VIEW

PARTS LIST AND DESCRIPTIONS

TUBES (GENERAL ELECTRIC, SYLVANIA)

ITEM No.	USE	TYPE	NOTES
V1	Mike 1 Preamplifier	6SF5	
V2	Mike 2 Preamplifier	6SF5	
V3	Mike 3 Preamplifier	6SF5	
V4	AF Mixer	6SJ7	
V5	AF Amp-Phase Inv.	6SN7GTB	
V6	Output	6L6GB	

ITEM No.	USE	TYPE	NOTES
V7	Output	6L6GB	
V8	Output	6L6GB	
V9	Output	6L6GB	
V10	Rectifier	5V4GA	
V11	Rectifier	5V4GA	

ELECTROLYTIC CAPACITORS

ITEM No.	RATING		REPLACEMENT DATA						NOTES
	CAP.	VOLT.	NEWCOMB PART No.	AEROVOX PART No.	CORNELL-DUBILIER PART No.	MALLORY PART No.	PYRAMID PART No.	SPRAGUE PART No.	
C1A	20	475	CE-30	AFH4-19-10	D0179.3	FP474	TMQ-19	TVLS-4825 *	
B	10	475			BBR25-50	TC36	TD-25-50		
C	10	475							
D	25	50							
C2	8	500		PRS500V8	BR850	TC82	TD-8-500	TVA-1902	

* Not normally in distributor's stock. Available thru distributor on order to manufacturer.

FIXED CAPACITORS

Capacity values given in the rating column are in mfd. for Paper Capacitors, and in mmfd. for Mica and Ceramic Capacitors.

ITEM No.	RATING			REPLACEMENT DATA						NOTES
	CAP.	VOLT	TOL	NEWCOMB PART No.	AEROVOX PART No.	CENTRALAB PART No.	CORNELL-DUBILIER PART No.	MALLORY PART No.	SPRAGUE PART No.	
C3	.047	600			P688N-047	DF-503	CUB6S47	GEM-6147	6TM-S47	
C4	.047	600			P688N-047	DF-503	CUB6S47	GEM-6147	6TM-S47	
C5	.047	600			P688N-047	DF-503	CUB6S47	GEM-6147	6TM-S47	
C6	.047	600			P688N-047	DF-503	CUB6S47	GEM-6147	6TM-S47	
C7	.047	600			P688N-047	DF-503	CUB6S47	GEM-6147	6TM-S47	
C8	.047	600			P688N-047	DF-503	CUB6S47	GEM-6147	6TM-S47	
C9	20000				BPD-02	DD-203	BYB6S2	B-120	5HK-S2	
C10	.1	600			P688N-1	DF-104	CUB6P1	GEM-601	6TM-P1	
C11	.1	600			P688N-1	DF-104	CUB6P1	GEM-601	6TM-P1	
C12	.1	600			P688N-1	DF-104	CUB6P1	GEM-601	6TM-P1	
C13	20000				BPD-02	DD-203	BYB6S1	B-120	5HK-S2	
C14	1500		10%				PM6D15	JL-215	6TM-D15	
C15	750		10%				1R5T75	JL-375	MS375	①
C16	30		10%		NPO-SI 30	DD-300	L10Q3	2T-5433	MS-43	
C17	.1	600			P688N-1	DF-104	CUB6P1	GEM-601	6TM-P1	
C18	.1	600			P688N-1	DF-104	CUB6P1	GEM-601	6TM-P1	
C19	10000				BPD-01	DD-103	BYA10S1	B-110	5HK-S1	②
C20	10000				BPD-01	DD-103	BYA10S1	B-110	5HK-S1	②

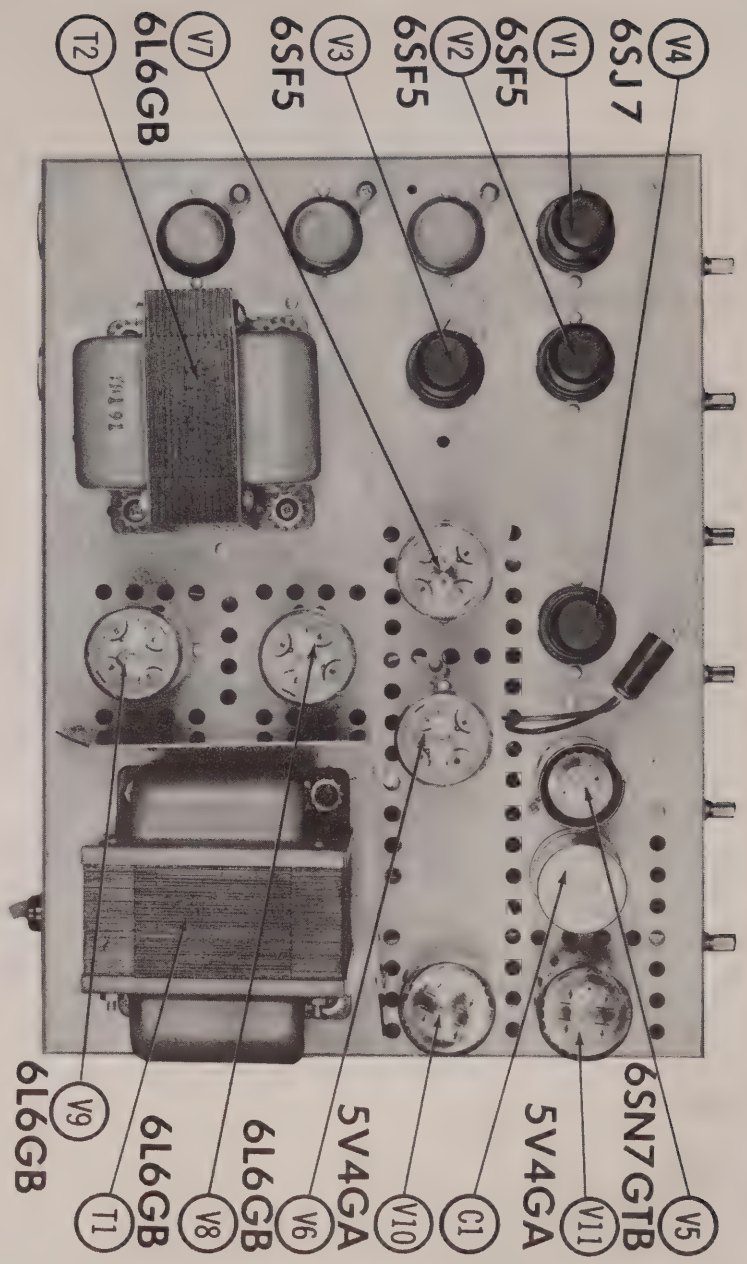
① Some versions may use 1500mmf 10% in this application.
② Not used in some versions.

CONTROLS

ITEM No.	RATING		REPLACEMENT DATA					INSTALLATION NOTES
	RESIST-ANCE	WATTS	NEWCOMB PART No.	CENTRALAB PART No.	CLAROSTAT PART No.	IRC PART No.	MALLORY PART No.	
R1A	2meg	½	RV-49	B-77		Q17-139	†	Treble
B	Switch			KR-1		76-1		Power On-Off
R2	15meg	½	RV-40					Bass
R3A	500K	½	RV-47	BT-67	A47F2-500K	Q20-133X	UT-430	Phono, Tap @ 150K
B	Shaft			Not Req.	KSS-3	Not Req.	Not Req.	
R4A	500K		RV-41	B-60	A47-500K-Z	Q13-133	U48	Mike 3
B	Shaft			Not Req.	KSS-3	Not Req.	Not Req.	
R5A	500K		RV-41	B-60	A47-500K-Z	Q13-133	U48	Mike 2
B	Shaft			Not Req.	KSS-3	Not Req.	Not Req.	
R6A	500K		RV-41	B-60	A47-500K-Z	Q13-133	U48	Mike 1
B	Shaft			Not Req.	KSS-3	Not Req.	Not Req.	

† "STA-LOC" equivalent: RU26R, SL-38, SS3500, US-41

CHASSIS—TOP VIEW



PARTS LIST AND DESCRIPTIONS (Continued)

RESISTORS

All wattages 1/2 watt, or less, unless otherwise listed.

ITEM No.	RATING OHMS	RATING WATT	NEWCOMB PART No.	NOTES
R7	18meg			
R8	100K			
R9	18meg			
R10	100K			
R11	18meg			
R12	100K			
R13	22K			
R14	470K			
R15	470K			
R16	470K			
R17	470K			
R18	10meg			
R19	270K			
R20	1.2meg			
R21	560Ω			
R22	560K			
R23	100K			
R24	100K			
R25	2200Ω			
R26	100K			
R27	2200Ω			
R28	27K			
R29	270K			
R30	56K			
R31	220Ω			Note 1
R32	56K			
R33	220Ω			Note 1
R34	270K			
R35	56K			
R36	220Ω			Note 1
R37	56K			
R38	220Ω			Note 1
R39	125Ω	10		
R40	3000Ω	5		
R41	33K	1		
R42	56K			
R43	100K			Note 2

Note 1. Not used in some versions.
Note 2. Some versions may use 82K in this application.

COILS (RF-IF)

ITEM No.	USE	REPLACEMENT DATA NEWCOMB PART No.	Gramer PART No.	Meissner PART No.	Merit PART No.	Miller PART No.	Ram PART No.	NOTES
L1	Fil. Choke	①						2.8uh
L2	Fil. Choke	①						2.8uh

① Not used in some versions.

TRANSFORMER (POWER)

ITEM No.	RATING PRI.	RATING SEC. 1	RATING SEC. 2	NEWCOMB PART No.	Halldorson PART No.	Merit PART No.	Ram PART No.	Stancor PART No.	Thordarson PART No.	Triad PART No.
T1	117V@ 1.8A	680 VCT @.240A	5V@ 4A	TR-198①						
	SEC. 3	SEC. 4	SEC. 5							
	6.3 VCT @5.2A									

① Alternate Part #TR-123

TRANSFORMER (AUDIO OUTPUT)

ITEM No.	IMPEDANCE PRI.	IMPEDANCE SEC.	NEWCOMB PART No.	Halldorson PART No.	Merit PART No.	Ram PART No.	Stancor PART No.	Thordarson PART No.	Triad PART No.	NOTES
T2	2700Ω CT	250Ω Taps@ 70V, 16Ω, 8Ω, 4Ω	TR-191①							① Alternate part #TR-130

FUSES

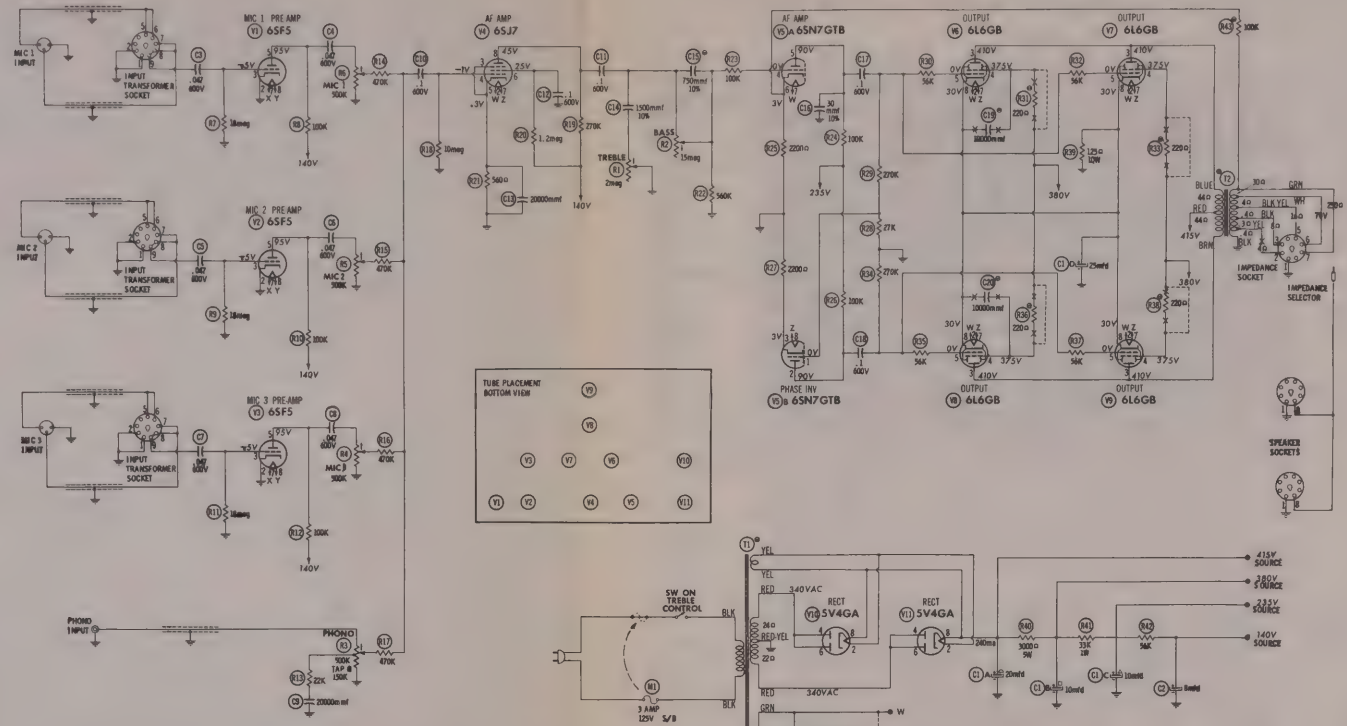
ITEM No.	TYPE	RATING	NEWCOMB PART No. FUSE	NEWCOMB PART No. HOLDER	LITTELFUSE PART No. FUSE	LITTELFUSE PART No. HOLDER	BUSS PART No. FUSE	BUSS PART No. HOLDER
M1	MDL	3A 125V SLO-BLO			313003. (3A 125V)	341001	MDL3	HKP

CABINETS & CABINET PARTS

(When Ordering Cabinets & Cabinet Parts, Specify Model, Chassis & Color)

WIRING DATA

General-use Unshielded Hook-up Wire ..... Use BELDEN No. 8530 (Solid) Available in Ten Colors
8524 (Stranded) Available in Ten Colors
Power Cord ..... Use BELDEN No. 1765-B (6 Ft. Length)
1725-K (7½ Ft. Length)



RESISTANCE READINGS

ITEM	TUBE	Pin 1	Pin 2	Pin 3	Pin 4	Pin 5	Pin 6	Pin 7	Pin 8
V1	6SF5	0Ω	0Ω	18meg	NC	†190K	NC	.1Ω	.1Ω
V2	6SF5	0Ω	0Ω	18meg	NC	†190K	TP	.1Ω	.1Ω
V3	6SF5	0Ω	0Ω	18meg	NC	†190K	NC	.1Ω	.1Ω
V4	6SJ7	0Ω	.1Ω	560Ω	10meg	560Ω	†1.3meg	1Ω	†360K
V5	6SN7GTB	27K	†130K	2200Ω	660K	†130K	2200Ω	.1Ω	.1Ω
V6	6L6GB	0Ω	.1Ω	†44Ω	†3200Ω	350K	TP	.1Ω	125Ω
V7	6L6GB	0Ω	.1Ω	†44Ω	†3200Ω	350K	TP	.1Ω	125Ω
V8	6L6GB	0Ω	.1Ω	†44Ω	†3200Ω	325K	TP	.1Ω	125Ω
V9	6L6GB	0Ω	.1Ω	†44Ω	†3200Ω	325K	NC	.1Ω	125Ω
V10	5V4GA	0Ω	¶	NC	24Ω	NC	24Ω	NC	¶
V11	5V4GA	0Ω	¶	NC	22Ω	NC	22Ω	NC	¶

¶ THIS READING WILL VARY DEPENDING UPON THE CONDITION OF THE ELECTROLYTIC IN THE CIRCUIT.
† MEASURED FROM PIN 2 OF V11.
NC NO CONNECTION
TP TIE POINT

1. DC voltage measurements taken with vacuum tube voltmeter. AC voltages measured at 1000 ohms per volt
2. Socket connections are shown as bottom views.
3. Measured values are from socket pin to common negative.
4. Line voltage maintained at 117 volts for voltage readings.
5. Nominal tolerance of component values makes possible a variation of ±15% in voltage and resistance readings.
6. All controls at minimum, proper output load connected.

● SEE PARTS LIST FOR ALTERNATE VALUE OR APPLICATION

DC COIL RESISTANCE VALUES UNDER ONE OHM NOT SHOWN ON SCHEMATIC DIAGRAM

ARROWS ON CONTROLS INDICATE CLOCKWISE ROTATION (CONTROL VIEWED FROM SHAFT END)

A PHOTOFACT STANDARD NOTATION SCHEMATIC

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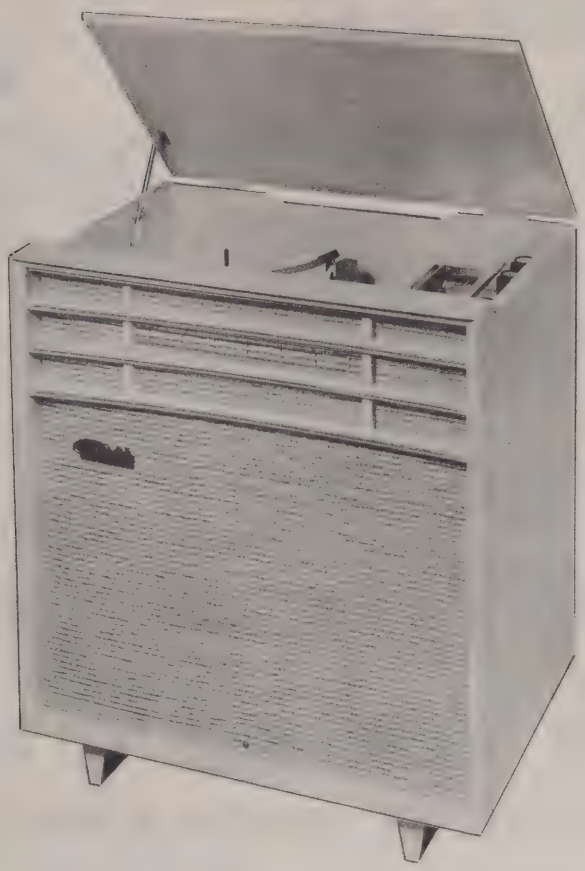
NEWCOMB
MODEL E-504

PHOTOFACT* Folder

EIA MEMBER ELECTRONIC INDUSTRIES ASSOCIATION

OLYMPIC
MODEL 694

OLYMPIC
MODEL 694

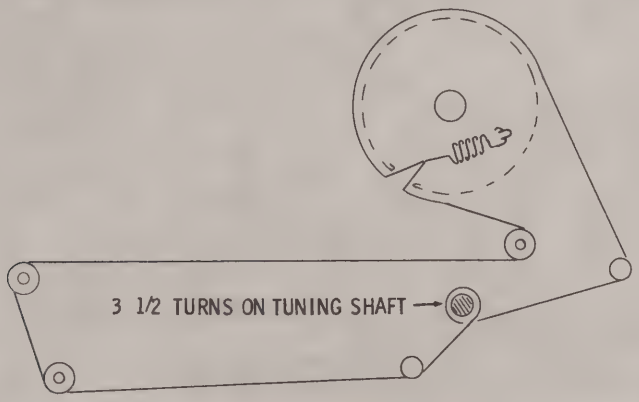


OLYMPIC
MODEL 694

TRADE NAME	Olympic Model 694		
MANUFACTURER	Olympic Radio & TV Inc., 34-01 38th Ave., Long Island City 1, N. Y.		
TYPE SET	AC Operated 8 Tube FM-AM Receiver With Stereo Amplifier And 4 Speed Automatic Record Changer		
POWER SUPPLY	110-120 Volts AC, 60 Cycles	RATING	75 Watts, .74 Amp. @ 117 Volts AC
TUNING RANGE—BROADCAST	535-1700KC	FREQ. MOD.	87-109MC

FOR SERVICE INFORMATION ON RECORD CHANGER RX5743-1 — SEE SIMILAR V-M 1200A — PHOTOFACT SET 353 FOLDER 16 OR RECORD CHANGER MANUAL RC-10

DIAL CORD STRINGING



HOWARD W. SAMS & CO., INC. Indianapolis 6, Indiana

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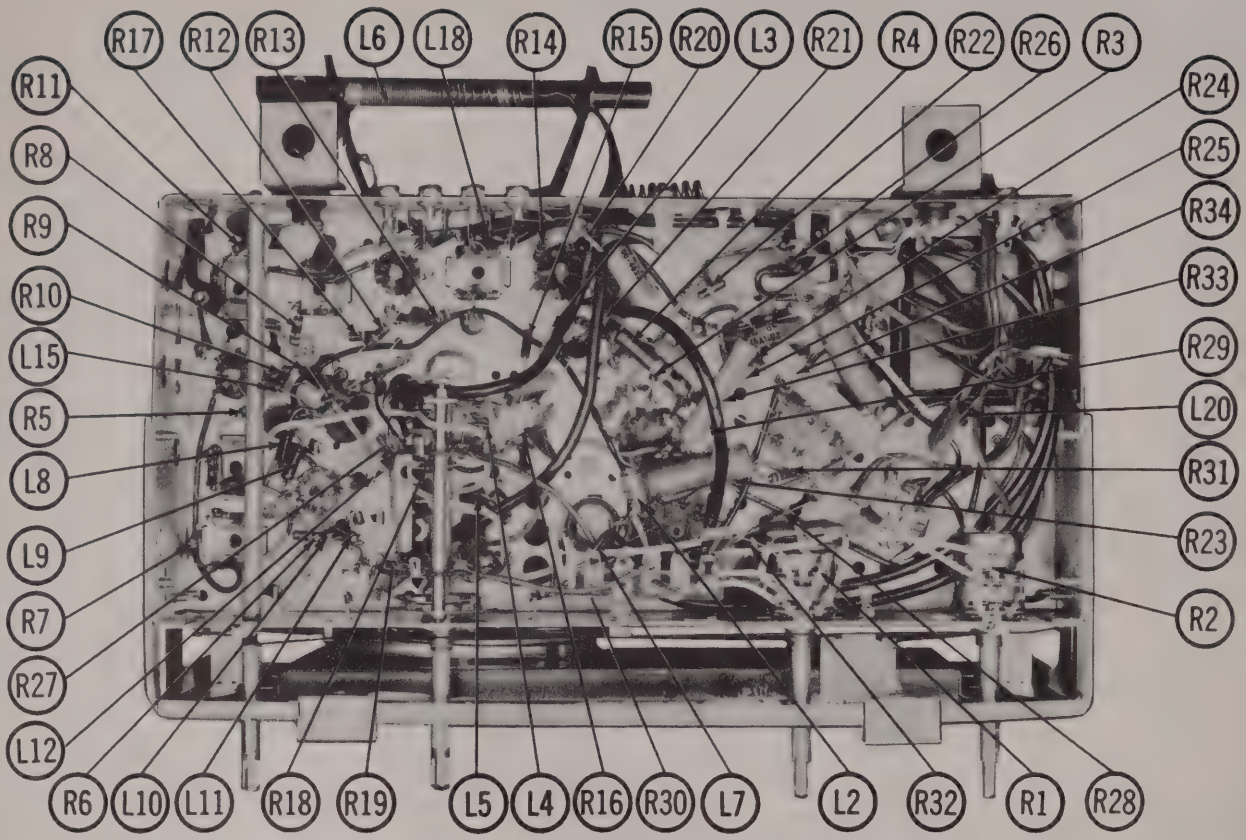
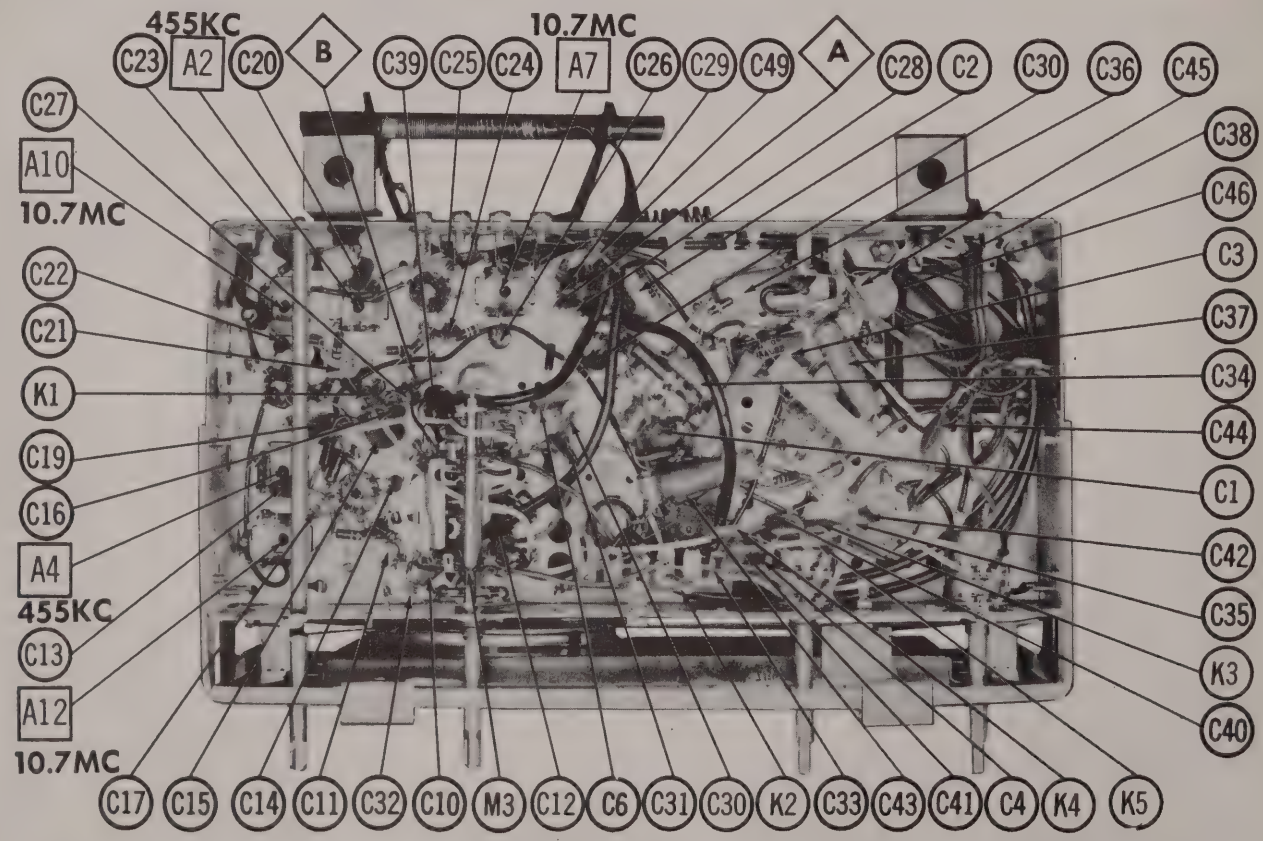
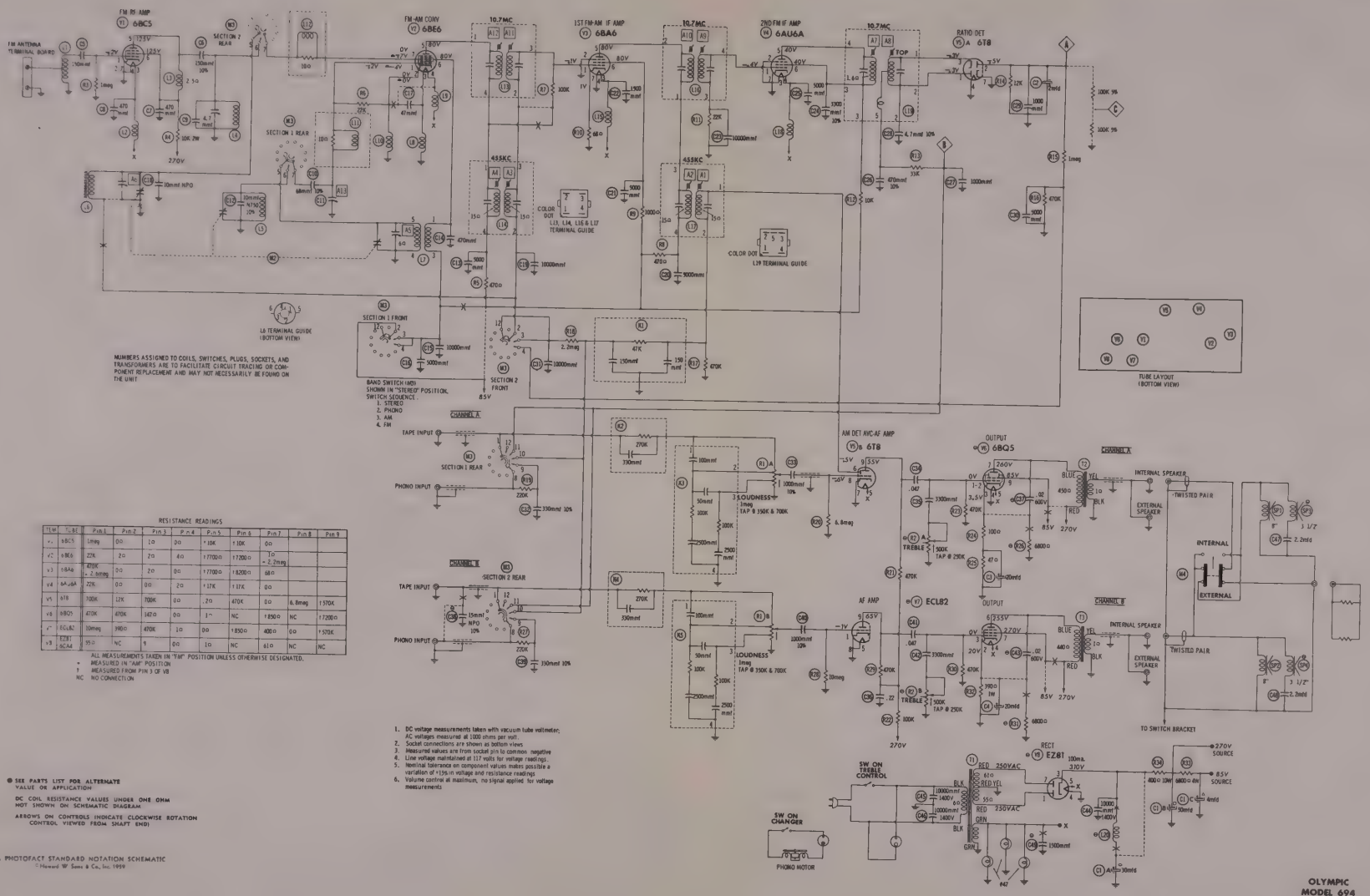


CHASSIS BOTTOM VIEW - RESISTOR & INDUCTOR IDENT.



CHASSIS BOTTOM VIEW - CAPACITOR, MISC, & ALIGNMENT IDENT.



NUMBERS ASSIGNED TO COILS, SWITCHES, PLUGS, SOCKETS, AND TRANSFORMERS ARE TO FACILITATE CIRCUIT TRACING OR COMPONENT REPLACEMENT AND MAY NOT NECESSARILY BE FOUND ON THE UNIT

RESISTANCE READINGS

ITEM	TUBE	Pin 1	Pin 2	Pin 3	Pin 4	Pin 5	Pin 6	Pin 7	Pin 8	Pin 9
v1	6BC5	1meg	0Ω	1Ω	0Ω	*10K	†10K	0Ω		
v2	6BE6	22K	2Ω	2Ω	4Ω	†77000Ω	†77000Ω	1Ω ÷ 2.2meg		
v3	6BA6	470K ÷ 2.6meg	0Ω	2Ω	0Ω	†77000Ω	†8200Ω	68Ω		
v4	6AU6A	22K	0Ω	0Ω	2Ω	†17K	†17K	0Ω		
v5	6T8	700K	12K	700K	0Ω	2Ω	470K	0Ω	6.8meg	†570K
v6	6BQ5	470K	470K	1470Ω	0Ω	1Ω	NC	†850Ω	NC	†7200Ω
v7	ECL82	10meg	390Ω	470K	1Ω	0Ω	†850Ω	400Ω	0Ω	†570K
v8	EZ81	350Ω	NC	1Ω	0Ω	1Ω	NC	610Ω	NC	NC

ALL MEASUREMENTS TAKEN IN "FM" POSITION UNLESS OTHERWISE DESIGNATED.
* MEASURED IN "AM" POSITION
† MEASURED FROM PIN 3 OF V8
NC NO CONNECTION

1. DC voltage measurements taken with vacuum tube voltmeter.
   AC voltages measured at 1000 ohms per volt.
2. Socket connections are shown as bottom views.
3. Measured values are from socket pin to common negative.
4. Line voltage maintained at 117 volts for voltage readings.
5. Nominal tolerance on component values makes possible a variation of ±15% in voltage and resistance readings.
6. Volume control at maximum, no signal applied for voltage measurements.

● SEE PARTS LIST FOR ALTERNATE VALUE OR APPLICATION

DC COIL RESISTANCE VALUES UNDER ONE OHM NOT SHOWN ON SCHEMATIC DIAGRAM

ARROWS ON CONTROLS INDICATE CLOCKWISE ROTATION CONTROL VIEWED FROM SHAFT END)

A PHOTOFACT STANDARD NOTATION SCHEMATIC
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OLYMPIC MODEL 694

ALIGNMENT INSTRUCTIONS

ALIGNMENT INSTRUCTIONS—READ CAREFULLY BEFORE ATTEMPTING ALIGNMENT

To set pointer, turn tuning capacitor fully closed and set pointer parallel with base of dial.
Volume control should be at maximum position. Output of signal generator should be no higher than necessary to obtain an output reading.

Suggested alignment tools:

A1 thru A4.....	GENERAL CEMENT #5097, 8727 WALSCO #2515
A5, A6.....	GENERAL CEMENT #5004, 5008, 5009 WALSCO #2520
A7 thru A12.....	GENERAL CEMENT #8606, 8606L, 8282, 9295 WALSCO #2526, 2543, 2544, 2545
A13.....	GENERAL CEMENT #8721, 8722 WALSCO #2519

AM ALIGNMENT

	DUMMY ANTENNA	SIGNAL GENERATOR COUPLING	SIGNAL GENERATOR FREQUENCY	BAND SWITCH POS.	RADIO DIAL SETTING	OUTPUT METER	ADJUST	REMARKS
1.	.1mfd	High side to pin 7 (grid) of Converter tube. Low side to chassis.	455KC (400∿ Mod.)	AM	Tuning gang fully open	Across voice coil	A1, A2, A3, A4	Adjust for maximum output.
2.		Loop	1500KC	"	1500KC	"	A5, A6	Fashion loop of several turns of wire and radiate signal into loop of receiver. Adjust for maximum output.
3.		"	600KC	"	600KC Signal	"		Check tracking.

FM IF ALIGNMENT USING AM SIGNAL GENERATOR AND VTVM

Connect two matched 100K (±1%) resistors in series from point Ⓐ to chassis. The junction of these two resistors is alignment point Ⓒ as shown on the schematic.

	DUMMY ANTENNA	SIGNAL GENERATOR COUPLING	SIGNAL GENERATOR FREQUENCY	BAND SWITCH POS.	RADIO DIAL SETTING	CONNECT VTVM	ADJUST	REMARKS
4.	200mmf	High side to pin 1 (grid) of 2nd FM IF Amp. Low side to chassis.	10.7MC (Unmod.)	FM	Tuning gang fully open	DC probe to point Ⓐ. Common to chassis.	A7	Adjust for maximum deflection.
5.	"	"	"	"	"	DC probe to point Ⓑ. Common to point Ⓒ.	A8	Adjust for zero reading. A positive and negative reading will be obtained on either side of the correct setting.
6.		High side to loop of two turns around converter tube. Low side to chassis.	"	"	"	DC probe to point Ⓐ. Common to chassis.	A9, A10, A11, A12	Adjust for maximum deflection.

FM IF ALIGNMENT USING FM GENERATOR AND OSCILLOSCOPE

Use frequency modulated signal with 60∿ modulation and 450KC sweep. Use 120∿ sawtooth voltage in scope for horizontal deflection.

	DUMMY ANTENNA	SIGNAL GENERATOR COUPLING	SIGNAL GENERATOR FREQUENCY	BAND SWITCH POS.	RADIO DIAL SETTING	CONNECT SCOPE	ADJUST	REMARKS
4.	200mmf	High side to pin 1 (grid) of 2nd FM IF Amp. Low side to chassis.	10.7MC (450KC Swp)	FM	Tuning gang fully open	Vert. amp to point Ⓐ. Low side to chassis.	A7	Disconnect stabilizing capacitor C2. Adjust for maximum gain and symmetry of response similar to Fig. 1 with marker as shown.
5.	"	"	"	"	"	Vert. amp to point Ⓑ. Low side to chassis.	A8	Reconnect C2. Adjust to place marker at the center of crossover lines similar to Fig. 2. SLIGHTLY retouch A7 for maximum amplitude and straightness of crossover lines.
6.		High side to loop of two turns around converter tube. Low side to chassis.	"	"	"	Vert. amp to point Ⓐ. Low side to chassis.	A9, A10, A11, A12	Disconnect C2. Adjust for maximum gain & symmetry of response similar to Fig. 1 with markers as shown. Reconnect C2.

FM RF ALIGNMENT

	DUMMY ANTENNA	SIGNAL GENERATOR COUPLING	SIGNAL GENERATOR FREQUENCY	BAND SWITCH POS.	RADIO DIAL SETTING	OUTPUT METER	ADJUST	REMARKS
7.	Two 150Ω Carbon Resistors	Across FM antenna terminals with 150Ω in each lead.	88MC (400∿ Mod.)	FM	88MC	Across voice coil	L5	Adjust for maximum output by compressing or expanding coil turns.
8.	"	"	108MC	FM	108MC	"	A13	Adjust for maximum output by compressing or expanding coil turns. Repeat Steps 7 & 8.
9.	"	"	98MC	"	98MC Signal	"	L1, L4	Adjust for maximum output by compressing or expanding coil turns.

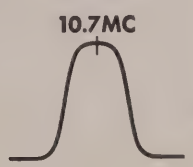
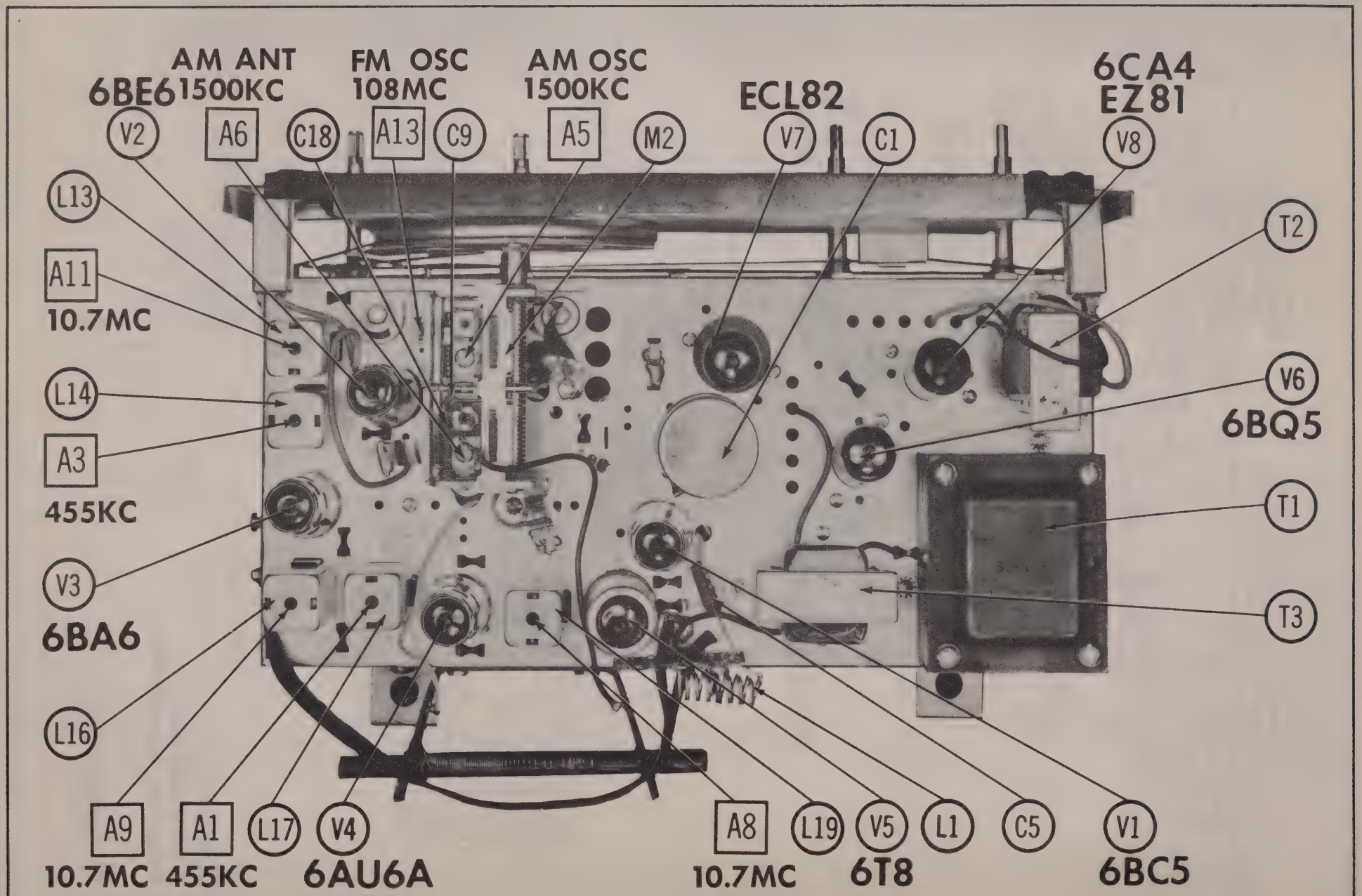


FIG. 1

FIG. 2



CHASSIS - TOP VIEW

PARTS LIST AND DESCRIPTIONS

TUBES

ITEM No.	USE	TYPE
V1	FM RF Amplifier	6BC5
V2	FM-AM Converter	6BE6
V3	1st FM-AM IF Amp.	6BA6
V4	2nd FM IF Amplifier	6AU6A
V5	Ratio Det-AM Det. - AVC-Channel "A" AF Amp.	6T8
V6	Channel "A" Output	6BQ5 (EL84)*
V7	Channel "B" AF Amp. - Channel "B" Output	ECL82
V8	Rectifier	EZ81/6CA4

* Alternate

ELECTROLYTIC CAPACITORS

ITEM No.	RATING CAP.	RATING VOLT.	OLYMPIC PART No.	AEROVOX PART No.	CORNELL-DUBILIER PART No.	MALLORY PART No.	PYRAMID PART No.	SPRAGUE PART No.	NOTES
C1A	▬30	400	C02350	AFH3-45-10	C0290	FP333.88	TMT-123	TVL-3725.6	
B	■50	400			BR445		TD-4-450	TVA-1702	
C	▲4	400							
C2	2	50	C04033	PRS50V2	BBR2-50	TC302	ML2-50	TE-1301	
C3	20	25	C04651	PRS50V20	BBR20-25	TT25X20	ML20-25	TE-1206	
C4	20	25	C04651	PRS50V20	BBR20-25	TT25X20	ML20-25	TE-1206	

FIXED CAPACITORS

Capacity values given in the rating column are in mfd. for Paper Capacitors, and in mmfd. for Mica and Ceramic Capacitors.

ITEM No.	RATING CAP.	RATING VOLT	RATING TOL	OLYMPIC PART No.	AEROVOX PART No.	CENTRALAB PART No.	CORNELL-DUBILIER PART No.	MALLORY PART No.	SPRAGUE PART No.	NOTES
C5	150				1469-00015	DD-151	22R5T15	MCB236	MS-315	
C6	150		10%		1469-00015	DD-151	22R5T15	MCB236	MS-315	
C7	470			CCD471X	BPD-00047	DD-471	BYA10T47	B-347	5GA-T47	
C8	470			CCD471X	BPD-00047	DD-471	BYA10T47	B-347	5GA-T47	
C9	4.7			C01083	NPO-SI 4.7	TCZ-4R7	C10V47C	CNO-547	5TCCB-V47	
C10	68		10%		1469-000068	TCZ-68	22R5Q68		MS-468	
C11										
C12	10		N750 10%	CCD100K	N750-DI 10	TCN-10	C10Q1U	CN7-410	5TCU-Q1S 10%*	
C13	5000			CCD502X	BPD-005	DD-502	BYA10D5	B-250	5HK-D5	
C14	470			CCD471X	BPD-00047	DD-471	BYA10T47	B-347	5GA-T47	
C15	10000			CCD103M	BPD-01	DD-103	BYA10S1	B-110	5HK-S1	
C16	5000			CCD502X	BPD-005	DD-502	BYA10D5	B-250	5HK-D5	
C17	47				BPD-000047	DD-470	L10Q47	CNO-447	5GA-Q47	
C18	10		NPO		NPO-DI 10	DTZ-10	C10Q1C	CNO-410	5TCC-Q1	
C19	10000			CCD103M	BPD-01	DD-103	BYA10S1	B-110	5HK-S1	*
C20	5000			CCD502X	BPD-005	DD-502	BYA10D5	B-250	5HK-D5	
C21	5000			CCD502X	BPD-005	DD-502	BYA10D5	B-250	5HK-D5	
C22	1500			CCD152X	BPD-0015	DD-152	BYA10D15	B-215	5HK-D15	
C23	10000			CCD103M	BPD-01	DD-103	BYA10S1	B-110	5HK-S1	
C24	3300		10%		DI-3300			JL-233	5GA-D33S 10%*	
C25	5000			CCD502X	BPD-005	DD-502	BYA10D5	B-250	5HK-D5	
C26	470		10%		DI-470	D6-471		JL-347	5GA-T47S 10%*	
C27	1000			CCD102M	BPD-001	DD-102	BYA10D1	B-210	5HK-D1	
C28	4.7		10%		NPO-DI 4.7	TCZ-4R7	C10V47C	ZT-5547	5TCCB-V47	
C29	1000			CCD102M	BPD-001	DD-102	BYA10D1M	B-210	5HK-D1	
C30	5000			CCD502X	BPD-005	DD-502	BYA10D5	B-250	5HK-D5	
C31	10000			CCD103M	BPD-01	DD-103	BYA10S1	B-110	5HK-S1	
C32	330		10%	CCD331K	DI-330	D6-331	L10T33	JL-333	5GA-T33S 10%*	
C33	1000		10%		DI-1000 10%			JL-210	5GA-D1S 10%*	
C34	.047	400		C0H4473	P488N-047	DF-502	CUB4S47	GEM-4147	4TM-S47	
C35	3300			CCD332M	BPD-0033	DD-332	BYA10D33	B-233	5HK-D33	
C36	.22	400			P488N-22		CUB4P22	GEM-4022	4TM-P22	
C37	.02	600			P688N-02	DD-203	CUB6S2	GEM-612	6TM-S2	①
C38	15		NPO 10%		NPO-DI 15	DTZ-15	C10Q15C	CNO-415	5TCC-Q15S 10%*	②
C39	330		10%	CCD331K	DI-330	D6-331	L10T33	JL-333	5GA-T33S 10%*	

CAPACITORS (cont)

ITEM No.	RATING CAP.	RATING VOLT	RATING TOL	OLYMPIC PART No.	AEROVOX PART No.	CENTRALAB PART No.	CORNELL-DUBILIER PART No.	MALLORY PART No.	SPRAGUE PART No.	NOTES
C40	1000		10%		DI-1000			JL-210	5GA-D1S 10%*	
C41	.047	400		C0H4473	P488N-047	DF-503	CUB4S47	GEM-4147	4TM-S47	
C42	3300			CCD332M	BPD-0033	DD-332	BYA10D33	B-233	5HK-D33	
C43	.02	600			P688N-02	DD-203	CUB6S2	GEM-612	6TM-S2	①
C44	10000	1400		C05777	DAC-27	DD16-103	HVE16S1	2HV-110	20HKB-S1	
C45	10000	1400		C05777	DAC-27	DD16-103	HVE16S1	2HV-110	20HKB-S1	
C46	10000	1400		C05777	DAC-27	DD16-103	HVE16S1	2HV-110	20HKB-S1	
C47	2.2mfd	3		C025691	P2922N-2	UK-225	WMF1W2E	GTM-12	121P20501R5S2	
C48	2.2mfd	3		C025691	P2922N-2	UK-225	WMF1W2E	GTM-12	121P20501R5S2	
C49	1500			CCD152	BPD-0015	DD-152	BYA10D15	B-215	5HK-D15	②

① Some versions may use 5000mmf in this application (Part #CCD502X).
② Not used in some versions.
* Not normally in distributor's stock. Available thru distributor on order to manufacturer.

CONTROLS

ITEM No.	RATING RESISTANCE	RATING WATTS	OLYMPIC PART No.	CENTRALAB PART No.	CLAROSTAT PART No.	IRC PART No.	MALLORY PART No.	INSTALLATION NOTES
R1A	1meg *	1/2	PT23963					Loudness, Channel A
B	1meg *	1/2						Loudness, Channel B
R2A	500K †	1/2	PT25961					Treble, Channel A
B	500K †	1/2						Treble, Channel B
C	Switch							

① Some versions may use a 3meg control without tap in this application.
* Taps ③ 350K and 700K. † Tap ② 250K.

RESISTORS

All wattages 1/2 watt, or less, unless otherwise listed.

ITEM No.	RATING	REMARKS
R3	1meg	
R4	10K 2W	
R5	470Ω	
R6	22K	
R7	100K	
R8	470Ω	
R9	1000Ω	
R10	68Ω	
R11	22K	
R12	10K	
R13	33K	

ITEM No.	RATING	REMARKS
R14	12K	
R15	1meg	
R16	470K	
R17	470K	
R18	2.2meg	
R19	220K	
R20	6.8meg	
R21	470K	
R22	100K	
R23	470K	
R24	100Ω	

ITEM No.	RATING	REMARKS
R25	47Ω	
R26	6800Ω	①
R27	220K	
R28	10meg	
R29	470K	
R30	470K	
R31	6800Ω	①
R32	390Ω 1W	
R33	6800Ω 4W	
R34	400Ω 10W	# RE3396

① Not used in some versions.

COMPONENT COMBINATIONS

ITEM No.	USE	DESCRIPTION	OLYMPIC PART No.	REPLACEMENT DATA	
K1	AM Detector Filter	150mmf, 150mmf, 47K		Aerovox	PA-98
				Centralab	PC-51
				Cornell-Dubilier	111TM2
				Sprague	D-2

PARTS LIST AND DESCRIPTIONS (Continued)

COMPONENT COMBINATIONS (cont)

ITEM No	USE	DESCRIPTION	OLYMPIC PART No.	REPLACEMENT DATA	
K2	Tone Compensation	330mmf, 270K		Aerovox Centralab	PA-432 PC-61
K3	Tone Compensation	50mmf, 100mmf, 2500mmf, 2500mmf, 100K, 100K		Centralab Sprague	PC-325 TC-5
K4	Tone Compensation	330mmf, 270K		Aerovox Centralab	PA-432 PC-61
K5	Tone Compensation	50mmf, 100mmf, 2500mmf, 2500mmf, 100K, 100K		Centralab Sprague	PC-325 TC-5

COILS (RF-IF)

ITEM No.	USE	REPLACEMENT DATA						NOTES
		OLYMPIC PART No.	Gramer PART No.	Meissner PART No.	Merit PART No.	Miller PART No.	Ram PART No.	
L1	FM Ant. Coil	CL2178						
L2	Fil. Choke		19-1001	19-1001	BC-562	4604		1.6uh
L3	RF Choke	CK5344						3.3uh ①
L4	FM RF Coil							
L5	FM Osc. Coil							
L6	Loopstick	LP26011						
L7	AM Osc. Coil	CL1466	14-1074	14-1074	BC-397 *	5480-C *		
L8	Fil. Choke							2.9uh
L9	Fil. Choke							2.9uh
L10	Cathode Choke	CK2447	19-2005	19-2005		4588		.47uh
L11	RF Choke							†
L12	RF Choke							†
L13	1st FM IF Trans.	TR1643	16-3487	16-3487	FM-254	1463		
L14	1st AM IF Trans.	TR1644	16-6758	16-6758	BC-352	12-C1	RF-1	
L15	Fil. Choke							2.9uh
L16	2nd FM IF Trans.	TR1643	16-3487	16-3487	FM-254	1463		
L17	2nd AM IF Trans.	TR1644	16-6758	16-6758	BC-353	12-C2	RF-2	
L18	Fil. Choke							2.9uh
L19	Ratio Detector	TR1646	17-3498	17-3498	FM-255	1465		
L20	Cathode Choke							2.9uh ②

* Drill Mtg. Hole.
† 2 Turns of Wire on 10Ω Resistor.

① IRC Part #CLA
② Not used in some versions

TRANSFORMER (POWER)

ITEM No.	RATING			REPLACEMENT DATA						
	PRI.	SEC. 1	SEC. 2	OLYMPIC PART No.	Halldorson PART No.	Merit PART No.	Ram PART No.	Stancor PART No.	Thordarson PART No.	Triad PART No.
T1	117V@ .74A	500 VCT @ .100A	6.3 V@ 3.9A	TR25747		P-3048				

TRANSFORMER (AUDIO OUTPUT)

ITEM No.	IMPEDANCE		REPLACEMENT DATA							NOTES
	PRI.	SEC.	OLYMPIC PART No.	Halldorson PART No.	Merit PART No.	Ram PART No.	Stancor PART No.	Thordarson PART No.	Triad PART No.	
T2	5300Ω	6-8Ω	TR25922	24S64	A-2901	AU-604	A-3823	24S64	S-53X	
T3	5500Ω	6-8Ω	TR26020	24S60	A-2900	AU-608	A-3856	24S60	S-51X	

SPEAKER

ITEM No.	TYPE			REPLACEMENT DATA		NOTES
	SIZE	FIELD	V. C. IMP.	OLYMPIC PART No.	QUAM PART No.	
SP1	8"	PM		SK1906	8A31	
SP2	8"	PM		SK1906	8A31	
SP3	3½"	PM		SK25463	3A15T	
SP4	3½"	PM		SK25463	3A15T	
	3½"	PM		SK2476-2①		① Alternate Part Number

PHONO CARTRIDGE

ITEM No.	REPLACEMENT DATA							REMARKS
	OLYMPIC PART No.	ASTATIC PART No.		ELECTRO-VOICE PART No.		JENSEN PART No.		
		CARTRIDGE	NEEDLE	CARTRIDGE	NEEDLE	CARTRIDGE	NEEDLE	
Mi		13TB *						* Includes needle & mounting mechanism.

MISCELLANEOUS

ITEM No.	PART NAME	OLYMPIC PART No.	NOTES
M2	Tuning Cap	CV5891	2 Gang
M3	Switch	SW25964	Band (FM-AM-Phono-Stereo)
M4	Switch		Ext. -Int. Speaker (DPDT)

CABINETS & CABINET PARTS

(When Ordering Cabinets & Cabinet Parts, Specify Model, Chassis & Color)

WIRING DATA

General-use Unshielded Hook-up Wire ..... Use BELDEN No. 8530 (Solid) Available in Ten Colors
8524 (Stranded) Available in Ten Colors
Power Cord ..... Use BELDEN No. 1765-B (6 Ft. Length)
1725-K (7½ Ft. Length)
Low-Loss Shielded Lead (Interconnecting) ..... Use BELDEN No. 8401
Phono Pick-up Arm Cable ..... Use BELDEN No. 8430 (Two Conductor - Twisted)

PHOTOFACT* Folder

EIA MEMBER ELECTRONIC INDUSTRIES ASSOCIATION

PACKARD-BELL MODELS RPC-1, 11RP6S, 11RP7S, 11RP8S, 11RP9S (Ch. 11HF1S)

PACKARD-BELL MODELS RPC-1, 11RP6S, 11RP7S, 11RP8S, 11RP9S (Ch. 11HF1S)

MODEL 11RP7S

PACKARD-BELL MODELS RPC-1, 11RP6S, 11RP7S, 11RP8S, 11RP9S (Ch. 11HF1S)

TRADE NAME	Packard-Bell Models RPC-1, 11RP6S, 11RP7S, 11RP8S, 11RP9S (Ch. 11HF1S)		
MANUFACTURER	Packard-Bell Electronics Corp., Service Div., 1920 S. Figueroa St., Los Angeles 7, California		
TYPE SET	AC Operated, 11 Tube FM-AM Receiver With 4 Speed Automatic Record Changer		
POWER SUPPLY	110-120 Volts AC, 60 Cycles	RATING	65 Watts, .62 Amp. @117 Volts AC (FM)
TUNING RANGE — BROADCAST	530KC-1620KC	FREQ. MOD.	88-108MC

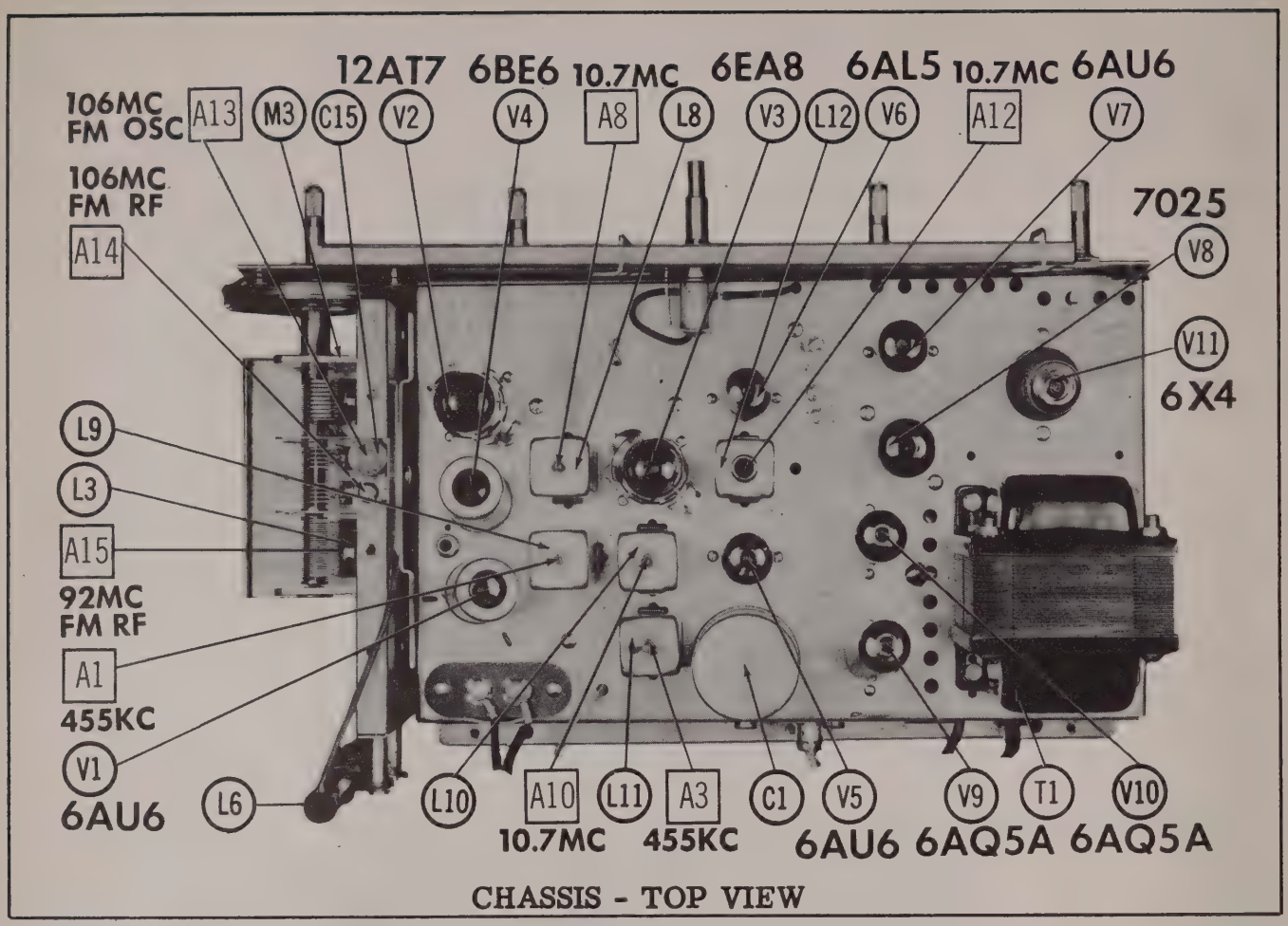
MODELS 11RP6S, 11RP7S AND SOME VERSIONS OF 11RP9S USE RECORD CHANGER PART #58076.
FOR SERVICE INFORMATION — SEE V-M 1200A — PHOTOFACT SET 353 FOLDER 16 OR RECORD MANUAL RC-10
SOME VERSIONS OF MODEL 11RP8S USE RECORD CHANGER PART #58077. FOR SERVICE INFORMATION — SEE GARRARD RC-121 — PHOTOFACT SET 421 FOLDER 7
MODELS RPC-1S AND SOME VERSIONS OF 11RP8S AND 11RP9S USE COLLARO CHANGER (PART #58074)

HOWARD W. SAMS & CO., INC. Indianapolis 6, Indiana

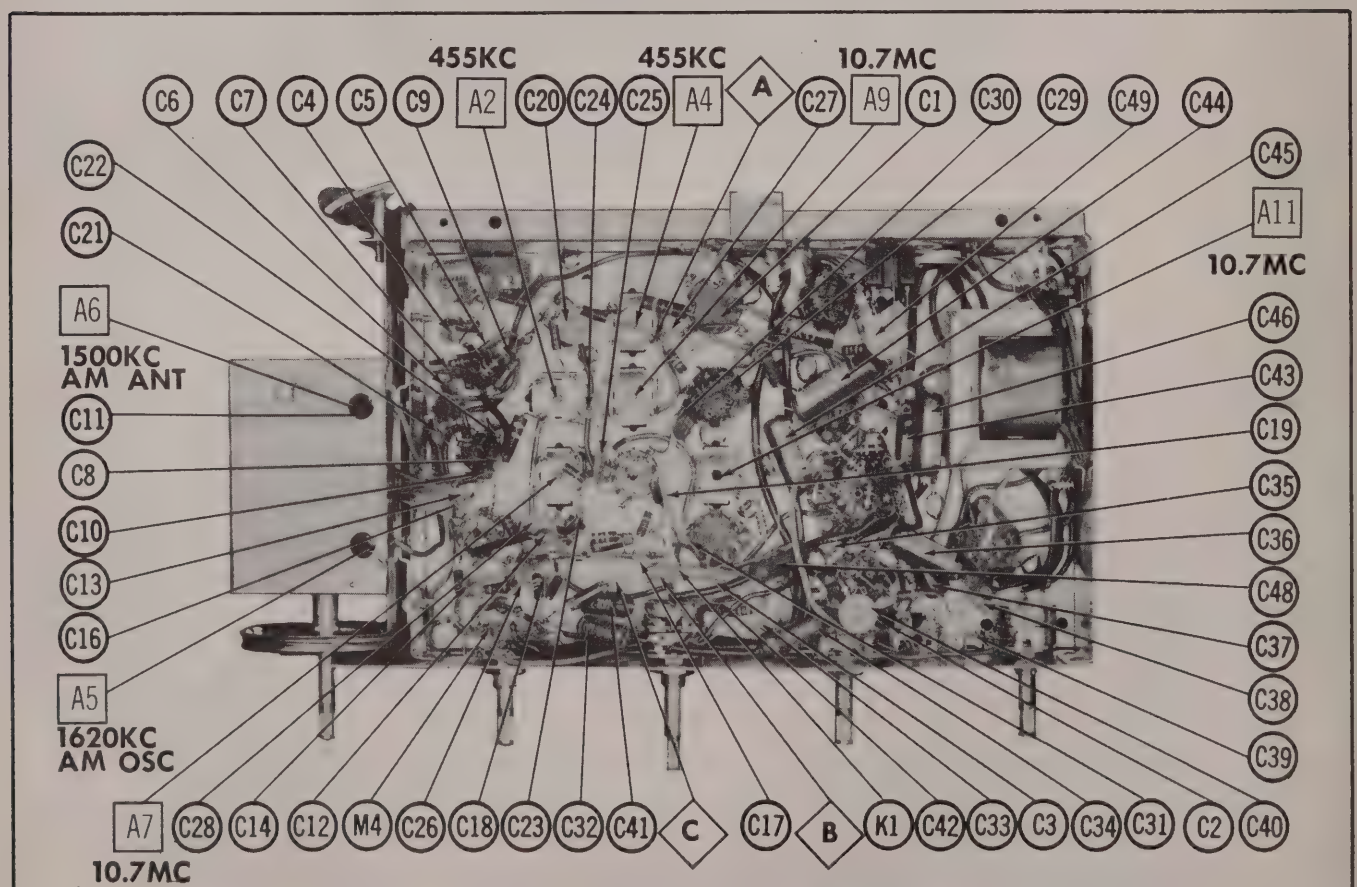
The listing of any available replacement part herein does not constitute in any case a recommendation, warranty or guaranty by Howard W. Sams & Co., Inc., as to the quality and suitability of such replacement part. The numbers of these parts have been compiled from information furnished to Howard W. Sams & Co., Inc., by the manufacturers of the particular type of replacement part listed. Reproduction or use, without express permission, of editorial or pictorial content, in any manner, is prohibited. No patent liability is assumed with respect to the use of the information contained herein. © 1959 Howard W. Sams & Co., Inc., Indianapolis 6, Indiana. Printed in U.S. of America

JM167

SET 459 FOLDER 11



CHASSIS - TOP VIEW



CHASSIS BOTTOM VIEW - CAPACITOR, MISC, & ALIGN IDENT.

ALIGNMENT INSTRUCTIONS

ALIGNMENT INSTRUCTIONS—READ CAREFULLY BEFORE ATTEMPTING ALIGNMENT

Volume control should be at maximum position. Output of signal generator should be no higher than necessary to obtain an output reading.
Suggested alignment tools: A1 thru A4, A7 thru A10.....GENERAL CEMENT #8721, 8722
WALSCO #2519
A5, A6, A13, A14.....GENERAL CEMENT #5004, 5008, 5009
WALSCO #2520
A11, A12, A15.....GENERAL CEMENT #8606, 8606L, 8282, 9295
WALSCO #2526, 2543, 2544, 2545

AM ALIGNMENT

	DUMMY ANTENNA	SIGNAL GENERATOR COUPLING	SIGNAL GENERATOR FREQUENCY	BAND SWITCH POS.	RADIO DIAL SETTING	CONNECT VTVM	ADJUST	REMARKS
1.	.1mfd	High side to pin 7 (grid) of AM converter. Low side to chassis.	455KC (400∿ Mod.)	AM	Tuning gang fully closed.	DC probe to point Ⓐ. Common to chassis.	A1, A2, A3, A4	Adjust for maximum deflection.
2.		Loop	1620KC	"	Tuning gang fully open.	"	A5	Fashion loop of several turns of wire and radiate signal into loop of receiver. Adjust for maximum output.
3.		"	1500KC	"	1500KC Signal	"	A6	"

FM IF ALIGNMENT USING AM SIGNAL GENERATOR & VTVM

	DUMMY ANTENNA	SIGNAL GENERATOR COUPLING	SIGNAL GENERATOR FREQUENCY	BAND SWITCH POS.	RADIO DIAL SETTING	CONNECT VTVM	ADJUST	REMARKS
4.	.01mfd	High side to pin 2 of FM mixer. Low side to chassis.	10.7MC (Unmod.)	FM	Tuning gang fully closed	DC probe to point Ⓑ. Common to chassis.	A7, A8, A9, A10, A11	Adjust for maximum deflection.
5.	"	"	"	"	"	DC probe to point Ⓒ. Common to chassis.	A12	Adjust for zero reading. A positive and negative reading will be obtained on either side of the correct setting.

FM IF ALIGNMENT USING FM SIGNAL GENERATOR & OSCILLOSCOPE

Use frequency modulated signal with 60∿ modulation and 450KC sweep. Use 120∿ sawtooth voltage in scope for horizontal deflection.

	DUMMY ANTENNA	SIGNAL GENERATOR COUPLING	SIGNAL GENERATOR FREQUENCY	BAND SWITCH POS.	RADIO DIAL SETTING	CONNECT SCOPE	ADJUST	REMARKS
4.	.01mfd	High side to pin 2 (grid) of FM mixer. Low side to chassis.	10.7MC (450KC Swp)	FM	Tuning gang fully closed	Vert. amp. to point Ⓑ. Low side to chassis.	A7, A8, A9, A10, A11	Disconnect stabilizing capacitor C3. Adjust for maximum amplitude and symmetry similar to Fig. 1.
5.	"	"	"	"	"	Vert. amp. to point Ⓒ. Low side to chassis.	A12	Reconnect stabilizing capacitor C3. Adjust so that 10.7MC occurs at center of cross-over lines similar to Fig. 2. SLIGHTLY retouch A11 for maximum amplitude and straightness of crossover lines.

FM RF ALIGNMENT

	DUMMY ANTENNA	SIGNAL GENERATOR COUPLING	SIGNAL GENERATOR FREQUENCY	BAND SWITCH POS.	RADIO DIAL SETTING	CONNECT VTVM	ADJUST	REMARKS
6.	Two 150Ω Carbon Resistors	Across FM antenna terminals with 150Ω in each lead.	106MC (Unmod.)	FM	106MC	DC probe to point Ⓐ. Common to chassis.	A13, A14	Adjust for maximum deflection.
7.	"	"	92MC	"	92MC	"	A15, L5	Adjust for maximum deflection. Adjust L5 by expanding or compressing coil turns. Rewax coil to prevent howl.

FIG. 1

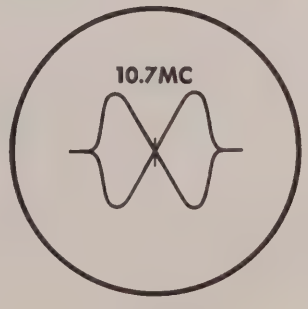
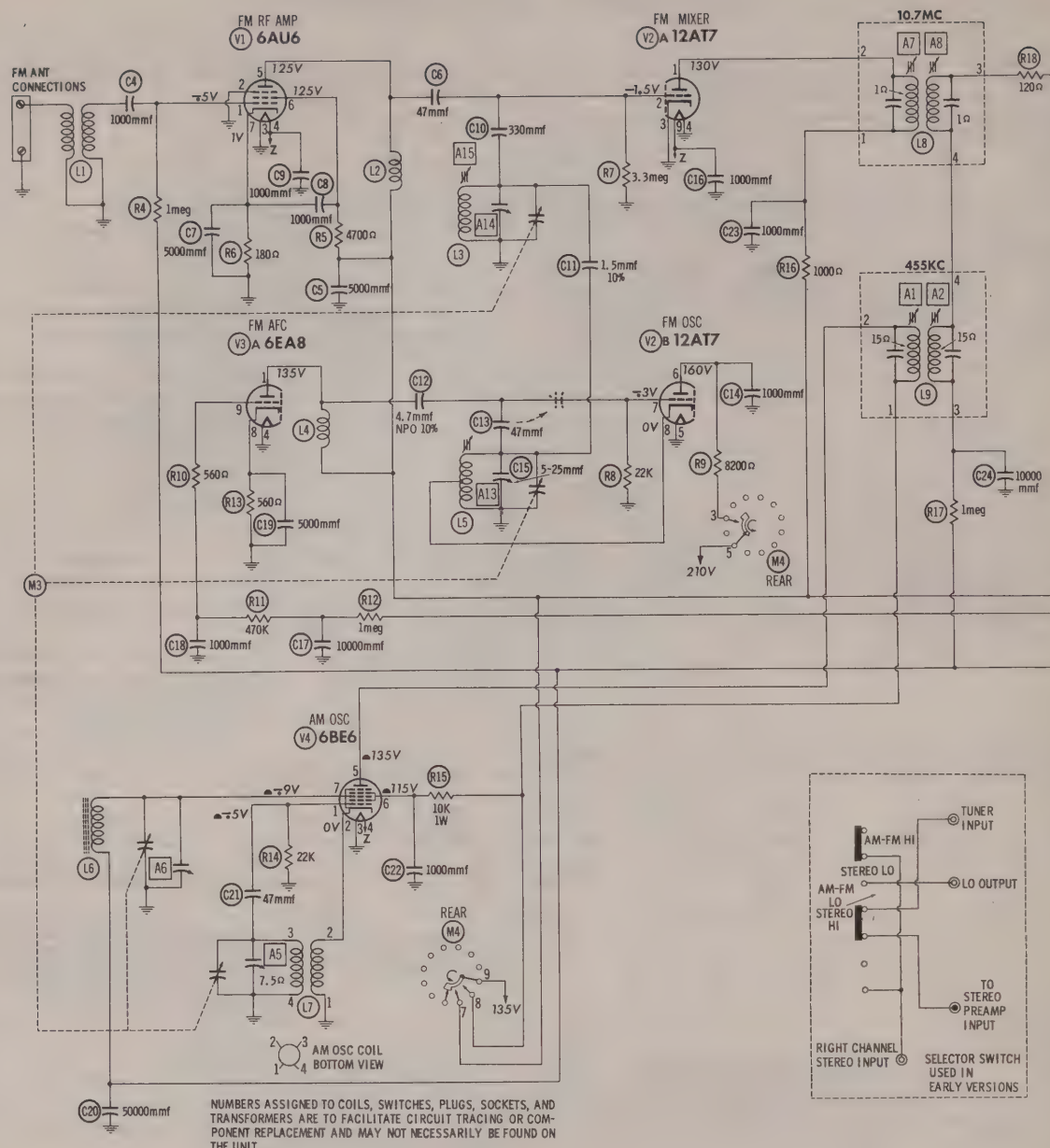


FIG. 2



NUMBERS ASSIGNED TO COILS, SWITCHES, PLUGS, SOCKETS, AND TRANSFORMERS ARE TO FACILITATE CIRCUIT TRACING OR COMPONENT REPLACEMENT AND MAY NOT NECESSARILY BE FOUND ON THE UNIT.

RESISTANCE READINGS

ITEM	TUBE	Pin 1	Pin 2	Pin 3	Pin 4	Pin 5	Pin 6	Pin 7	Pin 8	Pin 9
V1	6AU6	3.8meg	0Ω	0Ω	.1Ω	†5000Ω	†9700Ω	180Ω		
V2	12AT7	†6000Ω	3.3meg	0Ω	0Ω	0Ω	†11K	22K	0Ω	.1Ω
V3	6EA8	†5000Ω	3.8meg	†12K	0Ω	.1Ω	†12K	0Ω	560Ω	INF
V4	6BE6	-22K	.9Ω	0Ω	.1Ω	†-5000Ω	†-15K	-2.8meg		
V5	6AU6	660K	0Ω	.1Ω	0Ω	†15K	†15K	68Ω		
V6	6AL5	7800Ω	8300Ω	0Ω	.1Ω	INF	0Ω	INF		
V7	6AU6	4.7meg	1200Ω	.1Ω	0Ω	†225K	†565K	1200Ω		
V8	7025	†270K	1meg	1800Ω	.1Ω	.1Ω	†100K	22K	1800Ω	0Ω
V9	6AQ5A	470K	470Ω	0Ω	.1Ω	†150Ω	†2500Ω	470K		
V10	6AQ5A	470K	470Ω	0Ω	.1Ω	†150Ω	†2500Ω	470K		
V11	6X4	170Ω	NC	0Ω	.1Ω	NC	160Ω	¶		

ALL MEASUREMENTS TAKEN IN "FM" POSITION UNLESS OTHERWISE DESIGNATED.
- MEASURED IN "AM" POSITION.
¶ THIS READING WILL VARY DEPENDING UPON THE CONDITION OF THE ELECTROLYTIC IN THE CIRCUIT.
† MEASURED FROM PIN 7 OF V11
NC NO CONNECTION

1. DC voltage measurements taken with vacuum tube voltmeter; AC voltages measured at 1000 ohms per volt.
2. Socket connections are shown as bottom views.
3. Measured values are from socket pin to common negative.
4. Line voltage maintained at 117 volts for voltage readings.
5. Nominal tolerance on component values makes possible a variation of ±15% in voltage and resistance readings.
6. Volume control at maximum, no signal applied for voltage measurements.

Θ SEE PARTS LIST FOR ALTERNATE VALUE OR APPLICATION

DC COIL RESISTANCE VALUES UNDER ONE OHM NOT SHOWN ON SCHEMATIC DIAGRAM

ARROWS ON CONTROLS INDICATE CLOCKWISE ROTATION (CONTROL VIEWED FROM SHAFT END)

A PHOTOFACT STANDARD NOTATION SCHEMATIC

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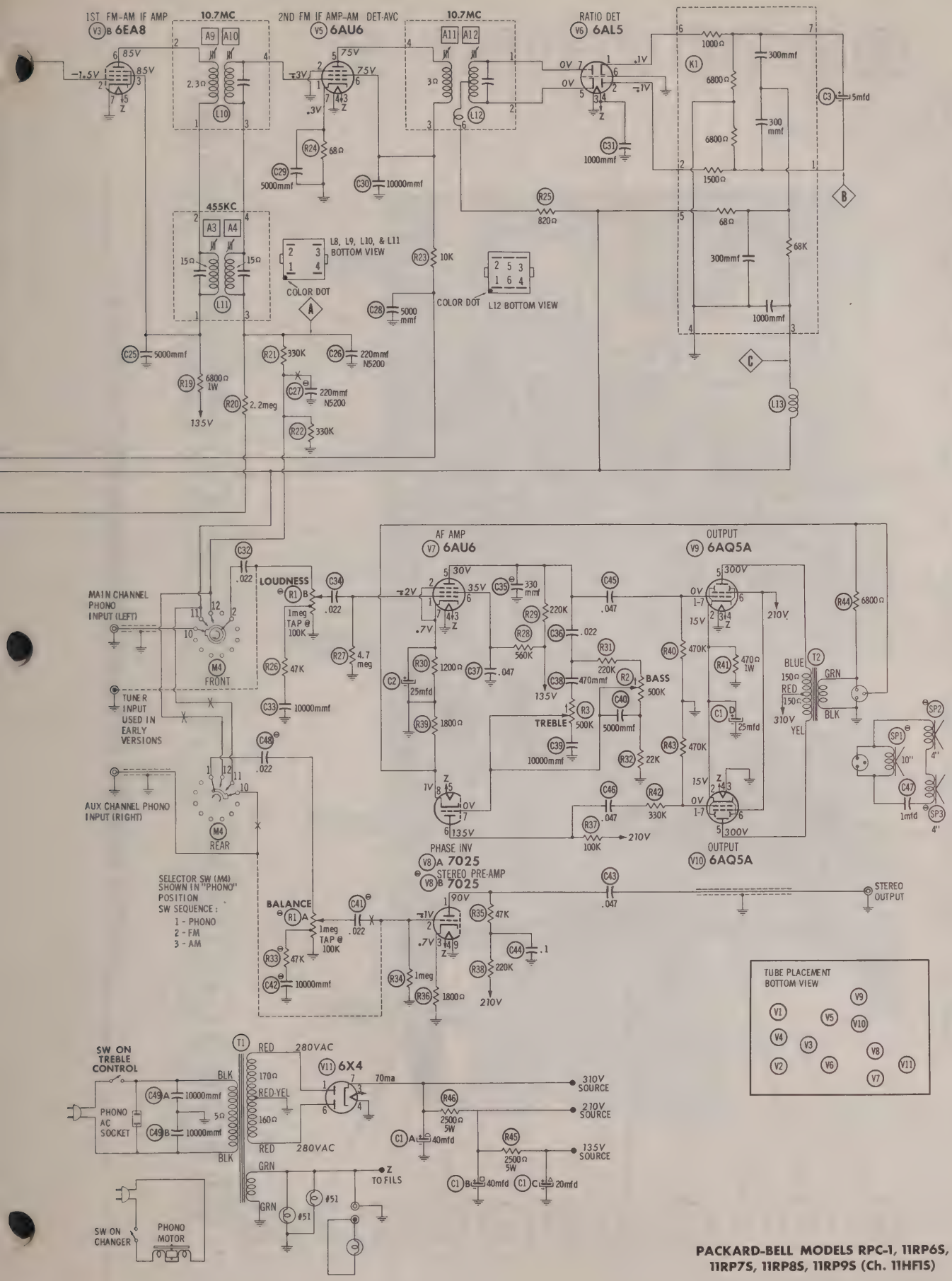
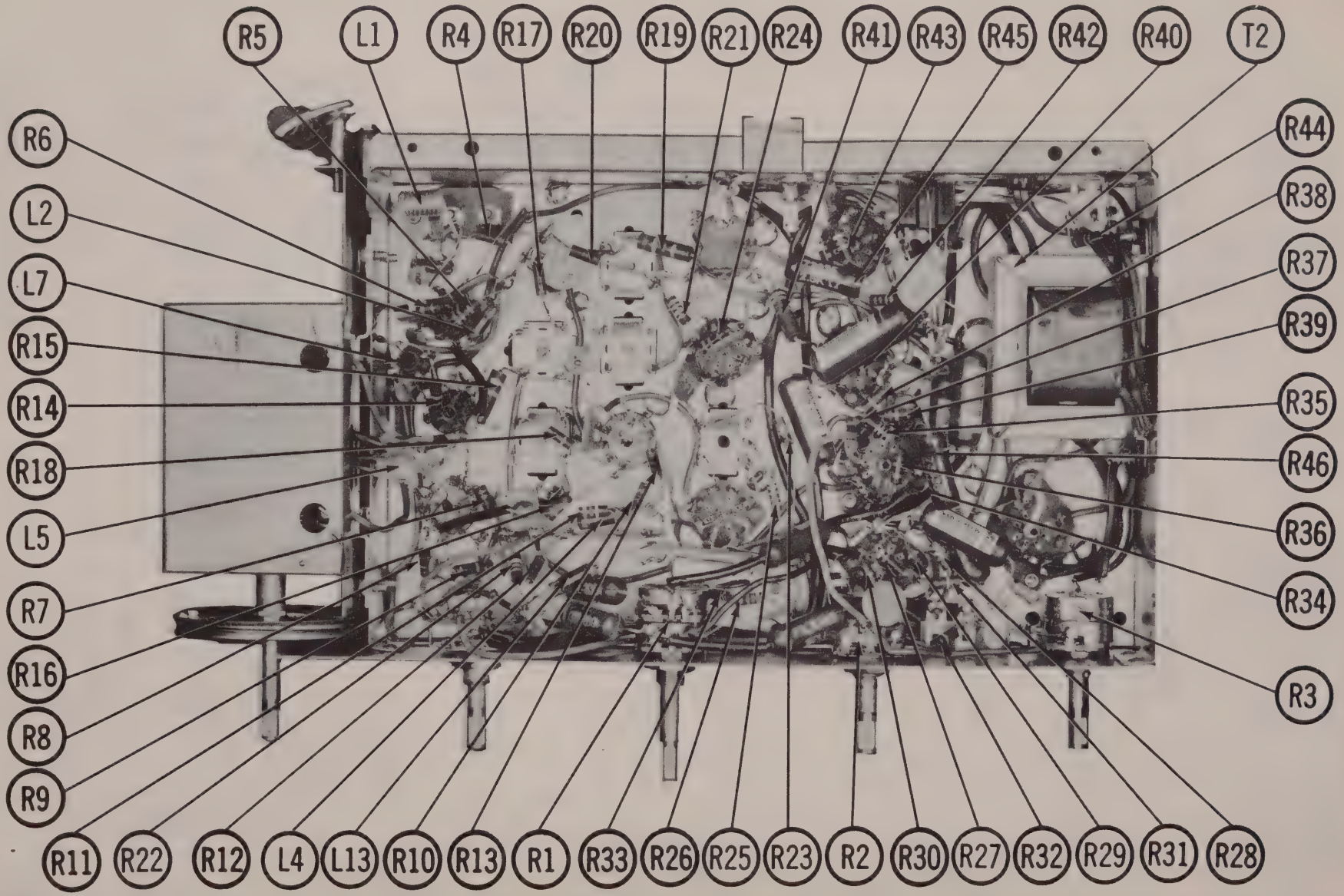


PACKARD-BELL MODELS RPC-1, 11RP6S, 11RP7S, 11RP8S, 11RP9S (Ch. 11HF1S)



CHASSIS BOTTOM VIEW - RESISTOR & INDUCTOR IDENT.

PARTS LIST AND DESCRIPTIONS

TUBES

ITEM No.	USE	TYPE	ITEM No.	USE	TYPE
V1	FM RF Amplifier	6AU6	V6	Ratio Detector	6AL5
V2	FM Mixer-FM Osc.	12AT7	V7	AF Amplifier	6AU6
V3	FM AFC-1st FM-AM IF Amp.	6EA8	V8	Phase Inv. -Stereo Preamp.	7025(12AX7/ ECC83*)
V4	AM Converter	6BE6	V9	Output	6AQ5A
V5	2nd FM IF Amp-AM Det. -AVC	6AU6	V10	Output	6AQ5A
			V11	Rectifier	6X4

* Alternate

ELECTROLYTIC CAPACITORS

ITEM No.	RATING CAP.	RATING VOLT.	Packard-Bell PART No.	AEROVOX PART No.	CORNELL-DUBILIER PART No.	MALLORY PART No.	PYRAMID PART No.	SPRAGUE PART No.	NOTES
C1A	▲40	350	24092	AFH4-52	D0430	FP419.3	TMQ-57	TVL-4621.6	
B	■40	350							
C	▲20	350							
D	25	25							
C2	25	25	24006	PRS25V25	BBR25-25	TC36	TD-25-25	TVA-1205	
C3	5	50	24164	PWE50005	EC5-50	TT50X5	ML5-50	TE-1303	

FIXED CAPACITORS

Capacity values given in the rating column are in mfd. for Paper Capacitors, and in mmfd. for Mica and Ceramic Capacitors.

ITEM No.	RATING CAP.	RATING VOLT	RATING TOL	Packard-Bell PART No.	AEROVOX PART No.	CENTRALAB PART No.	CORNELL-DUBILIER PART No.	MALLORY PART No.	SPRAGUE PART No.	NOTES
C4	1000			23860	BPD-001	DD-102	BYA10D1M	B-210	5HK-D1	
C5	5000			23931	BPD-005	DD-502	BYA10D5	B-250	5HK-D5	
C6	47			23912	BPD-000047	DD-470	L10Q47	UC-5447	5GA-Q47	
C7	5000			23931	BPD-005	DD-502	BYA10D5	B-250	5HK-D5	
C8	1000			23860	BPD-001	DD-102	BYA10D1M	B-210	5HK-D1	
C9	1000			23860	BPD-001	DD-102	BYA10D1M	B-210	5HK-D1	
C10	330			23944	BPD-00033	DD-331	L10T33	B-333	5GA-T33	
C11	1.5		10%	23866	NPO-SI 1.5	TCZ-1R5	C10V150	CNO-515	5TCCB-V15S 10%*	
C12	4.7		NPO 10%	23978	NPO-DI 4.7	DTZ-4R7	C10V47C	CNO-547	5TCCB-V47S 10%*	
C13	47			23912	BPD-000047	DD-470	L10Q47	UC-5447	5GA-Q47	
C14	1000			23860	BPD-001	DD-102	BYA10D1M	B-210	5HK-D1	
C15	5-25			23428		822-AZ		ST-554N		
C16	1000			23860	BPD-001	DD-102	BYA10D1M	B-210	5HK-D1	
C17	10000			23612	BPD-01	DD-103	BYA10S1	B-110	5HK-S1	
C18	1000			23860	BPD-001	DD-102	BYA10D1M	B-210	5HK-D1	
C19	5000			23931	BPD-005	DD-502	BYA10D5	B-250	5HK-D5	
C20	50000			23614	BPD-05	DF-503	CUB6S5	GEM-615	5HK-S5	
C21	47			23912	BPD-000047	DD-470	L10Q47	UC-5447	5GA-Q47	
C22	1000			23860	BPD-001	DD-102	BYA10D1M	B-210	5HK-D1	
C23	1000			23860	BPD-001	DD-102	BYA10D1M	B-210	5HK-D1	
C24	10000			23612	BPD-01	DD-103	BYA10S1	B-110	5HK-S1	
C25	5000			23931	BPD-005	DD-503	BYA10D5	B-250	5HK-D5	
C26	220		N5200	23915						
C27	220		N5200	23915						①
C28	5000			23931	BPD-005	DD-502	BYA10D5	B-250	5HK-D5	
C29	5000			23931	BPD-005	DD-502	BYA10D5	B-250	5HK-D5	
C30	10000			23632	BPD-01	DD-103	BYA10S1	B-110	5HK-S1	
C31	1000			23860	BPD-001	DD-102	BYA10D1M	B-210	5HK-D1	
C32	.022	200		23103	P288N-022	DD-203	CUB2S22	GEM-4122	2TM-S22	
C33	10000			23612	BPD-01	DD-103	BYA10S1	B-110	5HK-S1	
C34	.022	200		23103	P288N-022	DD-203	CUB2S22	GEM-4122	2TM-S22	
C35	330			23944	BPD-00033	DD-331	L10T33	B-333	5GA-T33	①
C36	.022	400		23122	P488N-022	DD-203	CUB4S22	GEM-4122	4TM-S22	

CAPACITORS (cont)

ITEM No.	RATING CAP.	RATING VOLT	RATING TOL	Packard-Bell PART No.	AEROVOX PART No.	CENTRALAB PART No.	CORNELL-DUBILIER PART No.	MALLORY PART No.	SPRAGUE PART No.	NOTES
C37	.047	400		23124	P488N-047	DF-503	CUB4S47	GEM-4147	4TM-S47	
C38	470			23916	SI 470	D6-471	L10T47	B-347	5GA-T47	
C39	10000			23612	BPD-01	DD-103	BYA10S1	B-110	5HK-S1	
C40	5000			23931	BPD-005	DD-503	BYA10D5	B-250	5HK-D5	
C41	.022	200		23103	P288N-022	DD-203	CUB2S22	GEM-4122	2TM-S22	①
C42	10000			23612	BPD-01	DD-103	BYA10S1	B-110	5HK-S1	①
C43	.047	400		23124	P488N-047	DF-503	CUB4S47	GEM-4147	4TM-S47	
C44	.1	400		23126	P488N-1	DF-104	CUB4P1	GEM-401	4TM-P1	
C45	.047	400		23124	P488N-047	DF-503	CUB4S47	GEM-4147	4TM-S47	
C46	.047	400		23124	P488N-047	DF-503	CUB4S47	GEM-4147	4TM-S47	
C47	1. mfd	100		23040	P288N-1.0		PM2W1	GEM-21	2TM-M1	
C48	.022	200		23103	P288N-022	DD-203	CUB2S22	GEM-4122	2TM-S22	①
C49A	10000							B-110		
B	10000			23982A	BPD-2X01	DD3-103	BYD6DS1	B-110	5HK-2S1	

① Used only in Model RPC-1 and revised versions of 11RP Series.
* Not normally in distributor's stock. Available thru distributor on order to manufacturer.

CONTROLS

ITEM No.	RATING RESISTANCE	RATING WATTS	Packard-Bell PART No.	CENTRALAB PART No.	CLAROSTAT PART No.	IRC PART No.	MALLORY PART No.	INSTALLATION NOTES
R1A	1meg	1/2	25071B①					Balance, Tap ⓐ 100K
B	1meg	1/2	①					Loudness, Tap ⓐ 100K
R2A	500K	1/2	25038A	B-60	A47-500K-Z	Q13-133	U48	Bass
B	Shaft			Not Req.	KSS-3	Not Req.	Not Req.	
R3A	500K	1/2	25039A	B-60-S	A47-500K-Z	Q13-133	U48	Treble
B	Shaft			Not Req.	KSS-3	Not Req.	Not Req.	
C	Switch			Not Req.	SWE-12	76-1	US-26	Power On-Off

① Some versions may use a single 500K Volume, tapped ⓐ 100K (Part #25057).

RESISTORS

All wattages 1/2 watt, or less, unless otherwise listed.

ITEM No.	RATING OHMS	RATING WATT	Packard-Bell PART No.	NOTES
R4	1meg		73161	
R5	4700Ω		73033	
R6	180Ω		73018	
R7	3.3meg		73167	
R8	22K		73041	
R9	8200Ω		73036	
R10	560Ω		73022	
R11	470K		73157	
R12	1meg		73161	
R13	560Ω		73022	
R14	22K		73041	
R15	10K	1	73237	
R16	1000Ω		73025	
R17	1meg		73161	
R18	120Ω		73014	
R19	6800Ω	1	73221	
R20	2.2meg		73165	
R21	330K		73155	
R22	330K		73155	
R23	10K		73037	
R24	68Ω		73011	
R25	820Ω		73024	

ITEM No.	RATING OHMS	RATING WATT	Packard-Bell PART No.	NOTES
R26	47K		73045	
R27	4.7meg		73169	
R28	560K		73058	
R29	220K		73153	
R30	1200Ω		73026	
R31	220K		73153	
R32	22K		73041	
R33	47K		73045	①
R34	1meg		73161	
R35	47K		73045	
R36	1800Ω		73028	
R37	100K		73049	
R38	220K		73153	
R39	1800Ω		73028	
R40	470K		73157	
R41	470Ω	1	73221	
R42	330K		73055	
R43	470K		73157	
R44	6800Ω		73035	
R45	2500Ω	5	73635	
R46	2500Ω	5	73635	

① Used only in Model RPC-1 and revised versions of 11RP Series.

PARTS LIST & DESCRIPTION (continued)

COMPONENT COMBINATIONS

ITEM No.	USE	DESCRIPTION	Packard-Bell PART No.	REPLACEMENT DATA
K1	Audio Coupling	300mmf, 300mmf, 300mmf, 1000mmf, 68Ω, 1000Ω, 1500Ω, 6800Ω, 6800Ω, 68K	23627A	Centralab PC-342

COILS (RF-IF)

ITEM No.	USE	REPLACEMENT DATA						NOTES
		Packard-Bell PART No.	Gramer PART No.	Meissner PART No.	Merit PART No.	Miller PART No.	Ram PART No.	
L1	FM Ant. Coil	29426						
L2	RF Choke	29124	19-1000	19-1000	BC-561	4602		1uh
L3	FM RF Coil	29158						
L4	RF Choke	29145			SW-631			4.7uh
L5	FM Osc. Coil	29242A						
L6	Loopstick	29358A						
L7	AM Osc. Coil	29229B	14-1073	14-1073	BC-393	69-OSC		
L8	1st FM IF Trans.	29148	16-3487	16-3487	FM-254	1463		
L9	1st AM IF Trans.	29066	16-6758	16-6758	BC-352	12-C1	RF-1	
L10	2nd FM IF Trans.	29152	16-3487	16-3487	FM-254	1463		
L11	2nd AM IF Trans.	29067	16-6758	16-6758	BC-353	12-C2	RF-2	
L12	Ratio Detector	29084	17-3498	17-3498	FM-255	1465		
L13	RF Choke	29145			SW-631			4.7uh

TRANSFORMER (POWER)

ITEM No.	RATING			REPLACEMENT DATA						
	PRI.	SEC. 1	SEC. 2	Packard-Bell PART No.	Halldorson PART No.	Merit PART No.	Ram PART No.	Stancor PART No.	Thordarson PART No.	Triad PART No.
T1	117V ⓐ .62A	560 VCT ⓐ .070A	6.3V ⓐ 4.4A	89075	22R02 ①				22R02 ①	

① Use original shields

TRANSFORMER (AUDIO OUTPUT)

ITEM No.	IMPEDANCE		REPLACEMENT DATA							NOTES
	PRI.	SEC.	Packard-Bell PART No.	Halldorson PART No.	Merit PART No.	Ram PART No.	Stancor PART No.	Thordarson PART No.	Triad PART No.	
T2	7200Ω CT	6-8Ω	89460	22S58	A-3021	AU-609	A-3870	22S58	S-55X	

SPEAKER

ITEM No.	TYPE			REPLACEMENT DATA		NOTES
	SIZE	FIELD	V. C. IMP.	Packard-Bell PART No.	QUAM PART No.	
SP1	10"	PM	6-7Ω	83708B ①	10A6A	① Model 11RP7S, RPC-1 (Alternate Part #83711)
SP2	4"	PM	5-6Ω	83111 ②	4A07T	② Model 11RP7S, 11RP6S, RPC-1
SP3	4"	PM	5-6Ω	83110 ②	4A07T	
	6"x 9"	PM		83121 ③		③ Model 11RP6S
	12"	PM		83807 ④		④ Model 11RP8S, 11RP9S
	5"	PM		83212 ④		
	5"	PM		83211 ④		

PHONO CARTRIDGE

ITEM No.	REPLACEMENT DATA							REMARKS
	Packard - Bell PART No.	ASTATIC PART No.		ELECTRO-VOICE PART No.		JENSEN PART No.		
		CARTRIDGE	NEEDLE	CARTRIDGE	NEEDLE	CARTRIDGE	NEEDLE	
M1	63046 ① 63045 ②	13-TB *						* Includes needles & mounting mechanism ① Model 11RP6S, RPC-1 (Include needles) ② Models 11RP8S, 11RP9S (Includes needles)

PHONO NEEDLE

(FOR REPLACEMENT IN ORIGINAL EQUIPMENT CARTRIDGE)

ITEM No.	REPLACEMENT DATA			REMARKS
	Packard-Bell PART No.	JENSEN PART No.	WALCO PART No.	
M2	63046 ① 63045 ②	E98 † and E98D♦ or E98X † and E98XD †♦	* W-101STS † or * W-101STD †♦ or * W-102S †	* Includes cartridge. † Jewel ♦ Diamond ① Includes cartridge. Models 11RP6S, 11RP7S, RPC-1 ② Includes cartridge. Models 11RP8S, 11RP9S

MISCELLANEOUS

ITEM No.	PART NAME	Packard-Bell PART No.	NOTES
M3	Tuning Cap.	23547C	4 Gang (AM Sections: Ant. 20—517mmf, Osc. 13—184mmf)
M4	Switch	86072	AM-FM-Phono

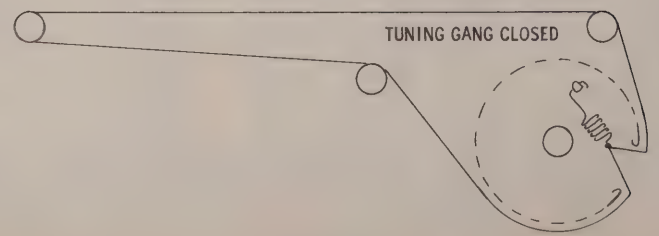
CABINETS & CABINET PARTS

(When Ordering Cabinets & Cabinet Parts, Specify Model, Chassis & Color)

NAME	PART NO.	DESCRIPTION
Knob	52206	Tuning, Volume
Knob	52205	Switch, Treble, Bass
Dial	38170	
Pointer	67041	

WIRING DATA

General-use Unshielded Hook-up Wire	Use BELDEN No. 8530 (Solid) Available in Ten Colors 8524 (Stranded) Available in Ten Colors
Power Cord	Use BELDEN No. 1765-B (6 Ft. Length) 1725-K (7½ Ft. Length)
Low-Loss Shielded Lead (Interconnecting)	Use BELDEN No. 8401
Phono Pick-up Arm Cable	Use BELDEN No. 8430 (Two Conductor - Twisted)



DIAL CORD STRINGING

PHOTOFACT* Folder with CIRCUITRACE*

EIA MEMBER

PHILCO MODELS G-749, G-749X, G-751, G-753, G-755

PHILCO MODELS G-749, G-749X, G-751, G-753, G-755

MODEL G-751

TRADE NAME	Philco Models G-749, G-749X, G-751, G-753, G-755
MANUFACTURER	Philco Corp., Tioga & "C" Streets, Philadelphia, Pa.
TYPE SET	AC Operated 5 Tube AM Receiver With Electric Clock
POWER SUPPLY	105 – 120 Volts AC, 60 Cycles
RATING	24 Watts, .27 Amp. @ 117 Volts AC (Less Clock)
TUNING RANGE—BROADCAST	540 – 1620KC

PHILCO MODELS G-749, G-749X, G-751, G-753, G-755

ALIGNMENT INSTRUCTIONS

ALIGNMENT INSTRUCTIONS—READ CAREFULLY BEFORE ATTEMPTING ALIGNMENT

Use isolation transformer, if available. If not, connect a .1mfd capacitor in series with low side of signal generator. Volume control should be at maximum position. Output of signal generator should be no higher than necessary to obtain an output reading.

Suggested alignment tools:
A1 thru A4..... GENERAL CEMENT #5097, 8727
WALSCO #2515
A5..... GENERAL CEMENT #5004, 5008, 5009
WALSCO #2520

	DUMMY ANTENNA	SIGNAL GENERATOR COUPLING	SIGNAL GENERATOR FREQUENCY	RADIO DIAL SETTING	OUTPUT METER	ADJUST	REMARKS
1.	.1mfd	High side to pin 7 (grid) of Converter. Low side to B-.	455KC (400~ Mod.)	Tuning gang fully open	Across voice coil	A1, A2, A3, A4	Adjust for maximum output.
2.		Loop	1620KC	"	"	A5	Fashion loop of several turns of wire and radiate signal into loop of receiver. Adjust for maximum output.
3.		"	1500KC	1500KC	"	A6	"

HOWARD W. SAMS & CO., INC. Indianapolis 6, Indiana

The listing of any available replacement part herein does not constitute in any case a recommendation, warranty or guaranty by Howard W. Sams & Co., Inc., as to the quality and suitability of such replacement part. The numbers of these parts have been compiled from information furnished to Howard W. Sams & Co., Inc., by the manufacturers of JG288

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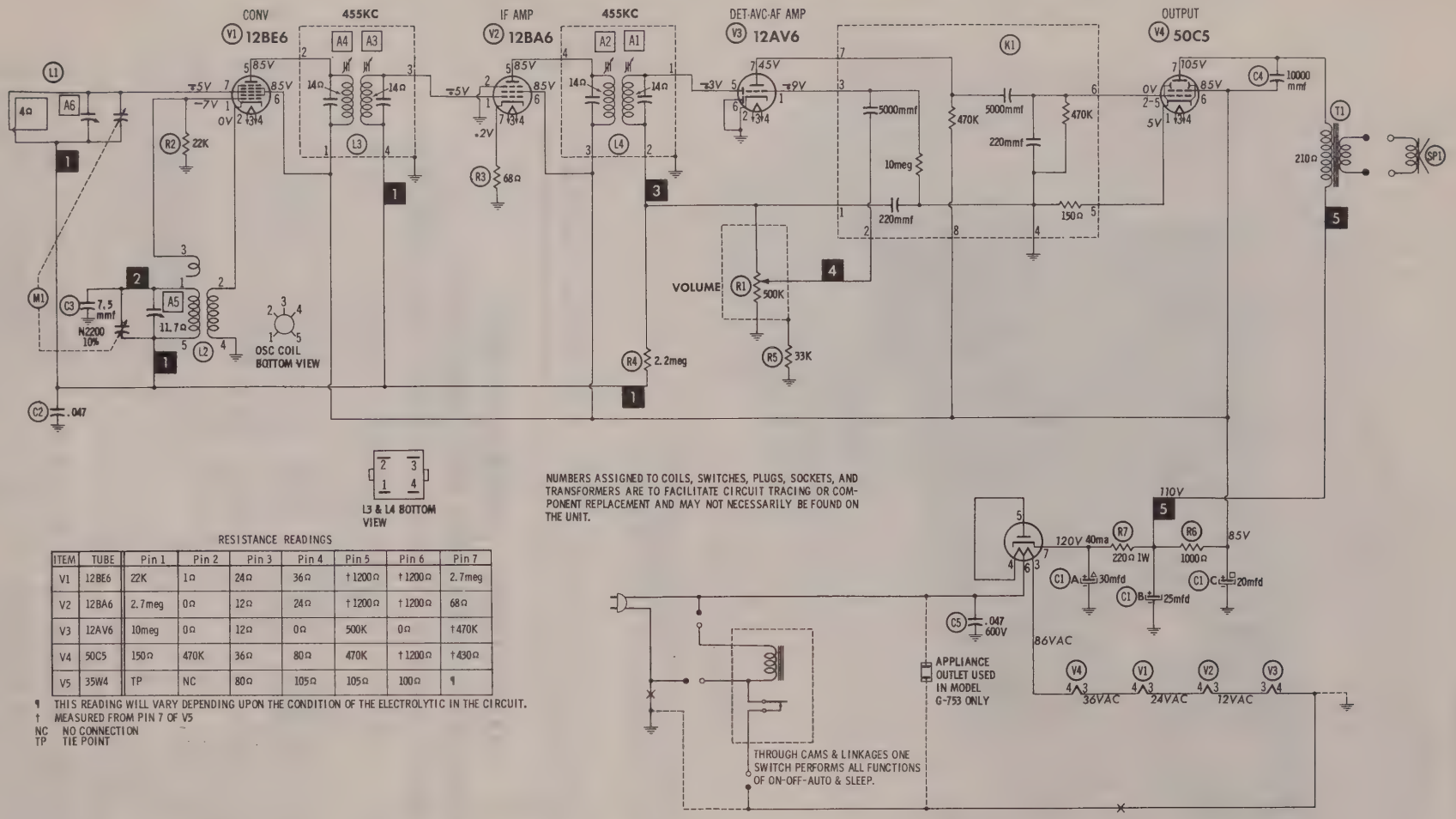
SET 459 FOLDER 12



RESISTANCE READINGS

ITEM	TUBE	Pin 1	Pin 2	Pin 3	Pin 4	Pin 5	Pin 6	Pin 7
V1	12BE6	22K	1Ω	24Ω	36Ω	†1200Ω	†1200Ω	2.7meg
V2	12BA6	2.7meg	0Ω	12Ω	24Ω	†1200Ω	†1200Ω	68Ω
V3	12AV6	10meg	0Ω	12Ω	0Ω	500K	0Ω	†470K
V4	50C5	150Ω	470K	36Ω	80Ω	470K	†1200Ω	†430Ω
V5	35W4	TP	NC	80Ω	105Ω	105Ω	100Ω	¶

¶ THIS READING WILL VARY DEPENDING UPON THE CONDITION OF THE ELECTROLYTIC IN THE CIRCUIT.
† MEASURED FROM PIN 7 OF V5
NC NO CONNECTION
TP TIE POINT

Θ SEE PARTS LIST FOR ALTERNATE VALUE OR APPLICATION

DC COIL RESISTANCE VALUES UNDER ONE OHM NOT SHOWN ON SCHEMATIC DIAGRAM

1. DC voltage measurements taken with vacuum tube voltmeter; AC voltages measured at 1000 ohms per volt.
2. Socket connections are shown as bottom views.
3. Measured values are from socket pin to common negative.
4. Line voltage maintained at 117 volts for voltage readings.
5. Nominal tolerance on component values makes possible a variation of ±15% in voltage and resistance readings.
6. Volume control at maximum, no signal applied for voltage measurements.

A PHOTOFACT STANDARD NOTATION SCHEMATIC with CIRCUITRACE

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PHILCO MODELS G-749, G-749X, G-751, G-753, G-755

PARTS LIST AND DESCRIPTIONS

TUBES

• CBS • GENERAL ELECTRIC • RAYTHEON • SYLVANIA •

ITEM No.	USE	TYPE
V1	Converter	12BE6
V2	IF Amplifier	12BA6
V3	Det. -AVC-AF Amp.	12AV6
V4	Output	50C5
V5	Rectifier	35W4

ELECTROLYTIC CAPACITORS

ITEM No.	RATING CAP.	RATING VOLT.	REPLACEMENT DATA PHILCO PART No.	AEROVOX PART No.	CORNELL-DUBILIER PART No.	MALLORY PART No.	PYRAMID PART No.	SPRAGUE PART No.	NOTES
C1A	▲30	150	30-2585-11	AFH3-05-50	C0080 ‡	PFP311.63		PCL-3435	
B	25	150							
C	■20	150							

‡ Use printed circuit adaptor #55277 and 55278.

FIXED CAPACITORS

Capacity values given in the rating column are in mfd. for Paper Capacitors, and in mmfd. for Mica and Ceramic Capacitors.

ITEM No.	RATING CAP.	RATING VOLT	RATING TOL	REPLACEMENT DATA PHILCO PART No.	AEROVOX PART No.	CENTRALAB PART No.	CORNELL-DUBILIER PART No.	MALLORY PART No.	SPRAGUE PART No.	NOTES
C2	.047	200		30-4650-45	P288N-047	DF-503	CUB2S47	GEM-4147	4TM-2S47	
C3	7.5		N2200 10%	30-1224-83						
C4	10000			30-1262	BPD-01	DD-103	BYA10S1	B-110	5HK-S1	
C5	.047	600		30-4650-45	P488N-047	DF-503	CUB6S47	GEM-6147	6TM-S47	

CONTROLS

ITEM No.	RATING RESISTANCE	RATING WATTS	REPLACEMENT DATA PHILCO PART No.	CENTRALAB PART No.	CLAROSTAT PART No.	IRC PART No.	MALLORY PART No.	INSTALLATION NOTES
R1	500K	½	33-5575-5					Volume

RESISTORS

All wattages 1/2 watt, or less, unless otherwise listed.

ITEM No.	RATING	REMARKS
R2	22K	
R3	68Ω	
R4	2.2meg	
R5	33K	
R6	1000Ω	
R7	220Ω 1W	

COMPONENT COMBINATIONS

ITEM No.	USE	DESCRIPTION	PHILCO PART No.	REPLACEMENT DATA
K1	Audio Coupling	220mmf, 220mmf, 5000mmf, 5000mmf, 150Ω, 470K, 470K 10meg	30-6500-1	

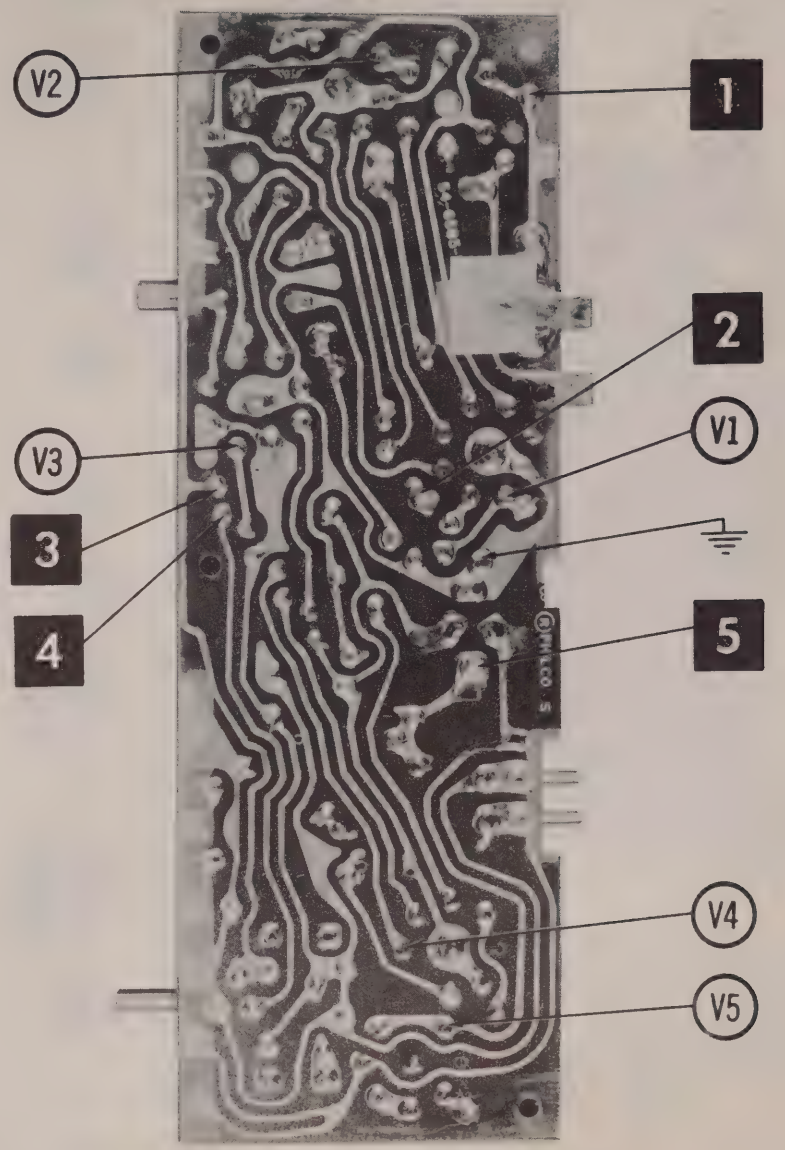
COILS (RF-IF)

ITEM No.	USE	REPLACEMENT DATA PHILCO PART No.	Gramer PART No.	Meissner PART No.	Merit PART No.	Miller PART No.	Ram PART No.	NOTES
L1	Loop Ant.	32-4768-1						
L2	Osc. Coil	32-4756-1						Includes Cap
L3	Input IF Trans.	32-4583-20	16-6780	16-6780	BC-356	13-PC1	RF-4	
L4	Output IF Trans.	32-4583-21	16-6780	16-6780	BC-357	13-PC2	RF-4	

PRINTED BOARD

A Howard W. Sams CIRCUITRACE® Photo

ARROWS INDICATING TUBE LOCATIONS ARE POINTING TO PIN 1 UNLESS OTHERWISE INDICATED



PARTS LIST AND DESCRIPTIONS (Continued)

TRANSFORMER (AUDIO OUTPUT)

ITEM No.	IMPEDANCE		REPLACEMENT DATA							NOTES
	PRI.	SEC.	PHILCO PART No.	Halldorson PART No.	Merit PART No.	Ram PART No.	Stancor PART No.	Thordarson PART No.	Triad PART No.	
T1	2400Ω	3-4Ω	32-8384-2	24S53	A-3025	AU-605	A-3332	24S53	S-12X	

SPEAKER

ITEM No.	TYPE			REPLACEMENT DATA		NOTES
	SIZE	FIELD	V. C. IMP.	PHILCO PART No.	QUAM PART No.	
SP1	4"	PM	3-4Ω	36-1675-9① 36-1672-2②	.4A1R	① Includes T1, Models G-749, G751, G749X ② Includes T1, Models G753, G755

MISCELLANEOUS

ITEM No.	PART NAME	PHILCO PART No.	NOTES
M1	Tuning Cap	31-2783-15	2 Gang
	Printed Board	54-6585-1	Models G751, G753, G755
	Printed Board	54-6585-3	Models G749, G749X

CABINETS & CABINET PARTS

(When Ordering Cabinets & Cabinet Parts, Specify Model, Chassis & Color)

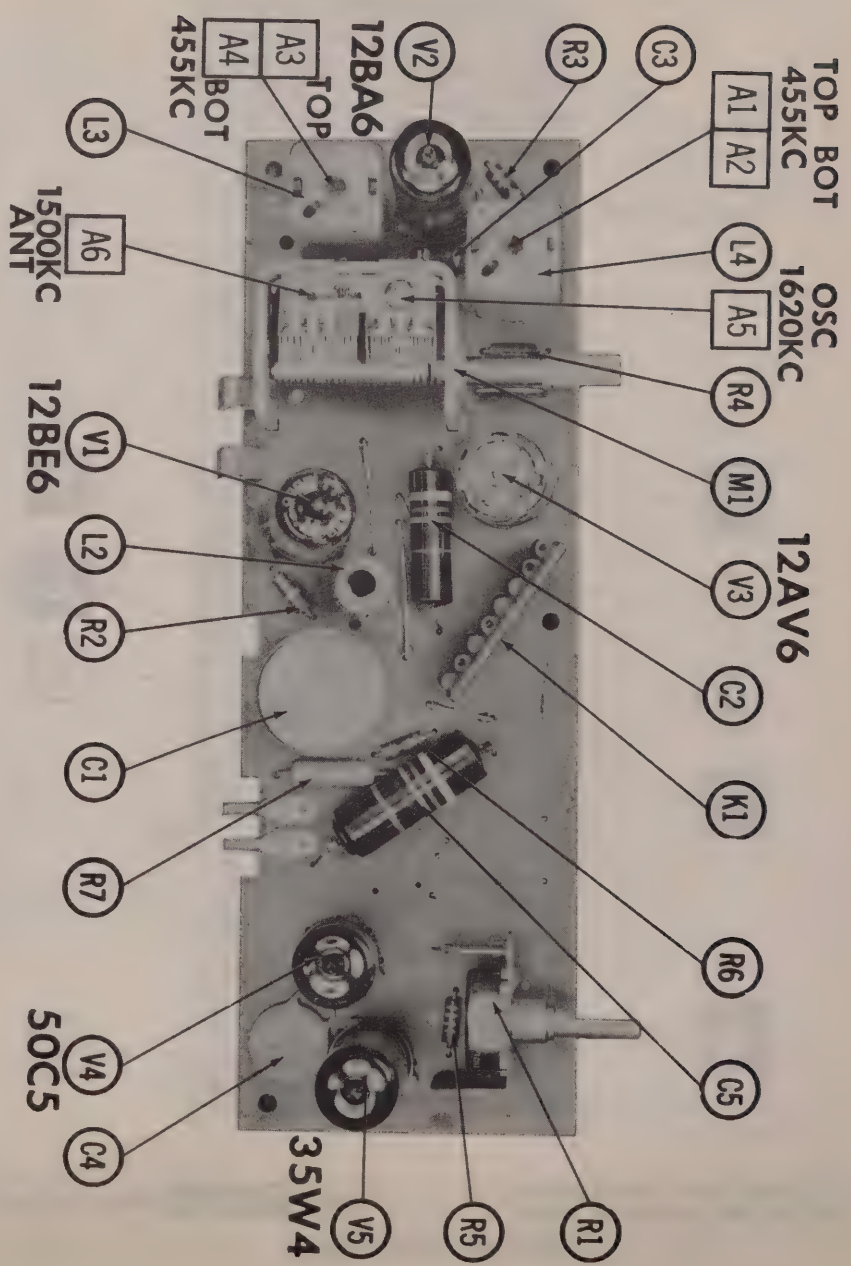
NAME	PART NO.	DESCRIPTION
Knob	54-6624-4	Tuning, Pink or Aqua, Model G751, G749
Knob	54-6624-8	Tuning, Lustre Ivory, Model G751
Knob	54-6093-20	Tuning, Model G753
Knob	54-6624-6	Tuning, Model G755
Knob	54-6624-13	Tuning, Model G749X
Knob	54-6624-5	Volume, Pink or Aqua, Model G751, G749
Knob	54-6624-9	Volume, Lustre Ivory, Model G751
Knob	54-6093-13	Volume, Model G753
Knob	54-6624-7	Volume, Model G755
Knob	54-6624-14	Volume, Model G749X
Knob	54-6436-1	Clock, Model G751
Knob	54-6436-2	Clock, Model G749, G749X
Knob	54-6436-3	Clock, Model G753, G755
Cabinet	51-0017	Lustre Ivory, Model G751, G749, G749X
Cabinet	51-0017-1	Pink, Model G751
Cabinet	51-0017-2	Aqua, Model G751
Cabinet	11321	Lustre Ivory, Model G753
Cabinet	11321-1	Pink, Model G753
Cabinet	11321-2	Charcoal, Model G753
Cabinet	51-0018-2	Aqua, Model G755
Cabinet	51-0018	Lustre Ivory, Model G755
Crystal	54-6714-1	Clock, Model G751
Crystal	6713-1	Clock, Model G749
Crystal	54-6623-1	Clock, Model G753
Crystal	54-6715-1	Clock, Model G755
Crystal	54-6713-2	Clock, Model G749X

WIRING DATA

General-use Unshielded Hook-up Wire ..... Use BELDEN No. 8530 (Solid) Available in Ten Colors
8524 (Stranded) Available in Ten Colors

Power Cord (Interlock Type) ..... Use BELDEN No. 8874

CHASSIS—TOP VIEW

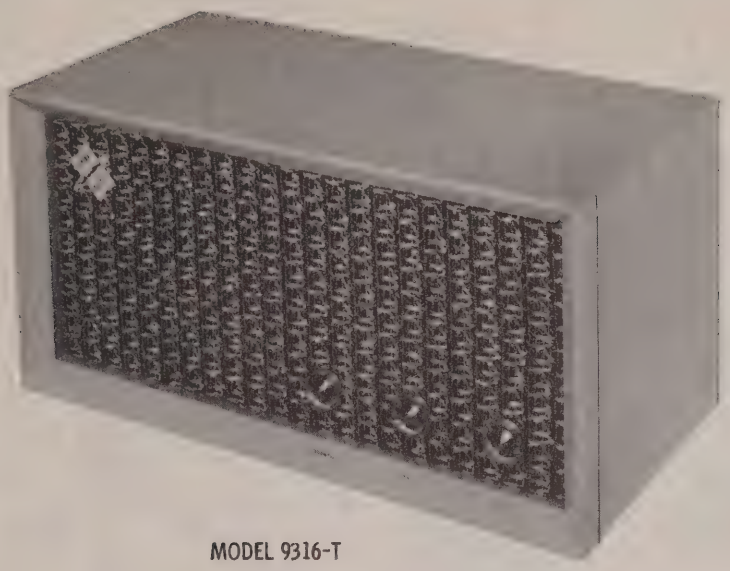


PHOTOFACT* Folder

EIA

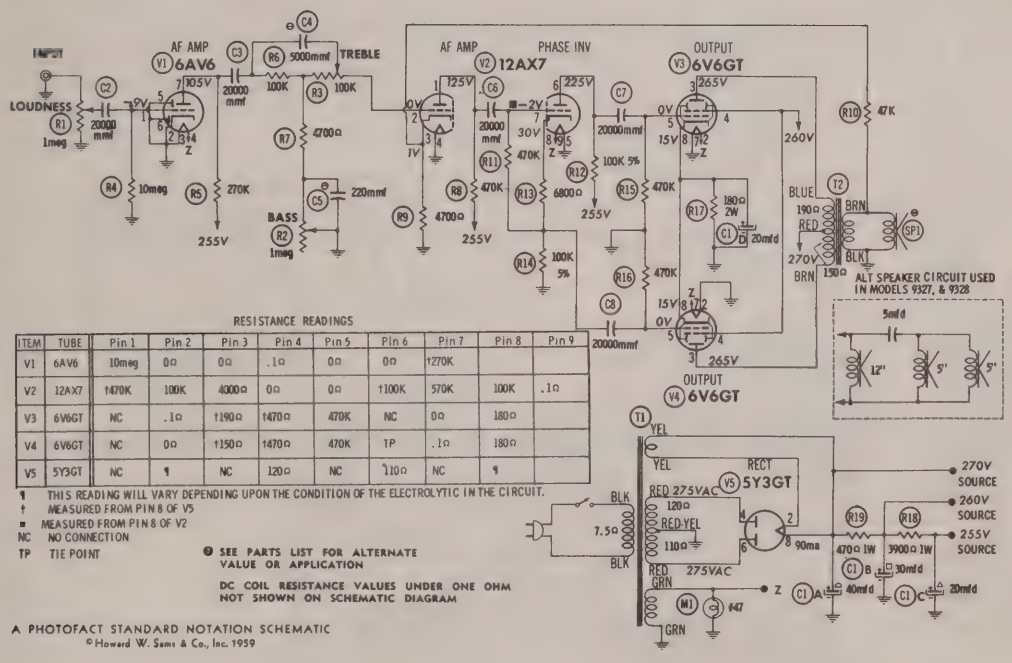
SILVERTONE MODELS 9315-T, 9316-T, 9327, 9328 (Ch. 450.10001)

SILVERTONE MODELS 9315-T, 9316-T, 9327, 9328 (Ch. 450.10001)



MODEL 9316-T

TRADE NAME	Silvertone Models 9315-T, 9316-T, 9327, 9328 (Ch. 450.10001)
SUPPLIER	Sears, Roebuck & Co., 925 S. Homan Ave., Chicago, Illinois
TYPE SET	AC Operated 5 Tube Audio Amplifier
POWER SUPPLY	110-120 Volts AC, 60 Cycles RATING 62 Watts, .58 Amp. @ 117 Volts AC



RESISTANCE READINGS

ITEM	TUBE	Pin 1	Pin 2	Pin 3	Pin 4	Pin 5	Pin 6	Pin 7	Pin 8	Pin 9
V1	6AV6	10meg	0Ω	0Ω	.1Ω	0Ω	0Ω	†270K		
V2	12AX7	†470K	100K	4000Ω	0Ω	0Ω	†100K	570K	100K	.1Ω
V3	6V6GT	NC	.1Ω	†190Ω	†470Ω	470K	NC	0Ω	180Ω	
V4	6V6GT	NC	0Ω	†150Ω	†470Ω	470K	TP	.1Ω	180Ω	
V5	5Y3GT	NC	¶	NC	120Ω	NC	‡110Ω	NC	¶	

¶ THIS READING WILL VARY DEPENDING UPON THE CONDITION OF THE ELECTROLYTIC IN THE CIRCUIT.
† MEASURED FROM PIN 8 OF V5
■ MEASURED FROM PIN 8 OF V2
NC NO CONNECTION
TP TIE POINT

● SEE PARTS LIST FOR ALTERNATE VALUE OR APPLICATION

DC COIL RESISTANCE VALUES UNDER ONE OHM NOT SHOWN ON SCHEMATIC DIAGRAM

A PHOTOFACT STANDARD NOTATION SCHEMATIC
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SILVERTONE MODELS 9315-T, 9316-T, 9327, 9328 (Ch. 450.10001)

SET 459 FOLDER 13

HOWARD W. SAMS & CO., INC. Indianapolis 6, Indiana

The listing of any available replacement part herein does not constitute in any case a recommendation, warranty or guaranty by Howard W. Sams & Co., Inc., as to the quality and suitability of such replacement part. The numbers of these parts have been compiled from information furnished to Howard W. Sams & Co., Inc., by the manufacturers of JX153

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PARTS LIST AND DESCRIPTIONS

TUBES (GENERAL ELECTRIC, SYLVANIA)

ITEM No.	USE	TYPE	NOTES
V1	AF Amplifier	6AV6	
V2	AF Amp. -Phase Inv.	12AX7	
V3	Output	6V6GT	
V4	Output	6V6GT	
V5	Rectifier	5Y3GT	

ELECTROLYTIC CAPACITORS

ITEM No.	RATING CAP.	RATING VOLT.	REPLACEMENT DATA Silvertone PART No.	AEROVOX PART No.	CORNELL-DUBILIER PART No.	MALLORY PART No.	PYRAMID PART No.	SPRAGUE PART No.	NOTES
C1A	▲40	350	A-110197-1	AFH4-52	D0430	FP419.3	TMQ-57	TVL-4621.6	
B	■30	300							
C	▲20	250							
D	20	25							

FIXED CAPACITORS

Capacity values given in the rating column are in mfd. for Paper Capacitors, and in mmfd. for Mica and Ceramic Capacitors.

ITEM No.	RATING CAP.	RATING VOLT	RATING TOL	REPLACEMENT DATA Silvertone PART No.	AEROVOX PART No.	CENTRALAB PART No.	CORNELL-DUBILIER PART No.	MALLORY PART No.	SPRAGUE PART No.	NOTES
C2	20000			A110196-4	BPD-02	DD-203	BYB6S2	B-120	5GA-S2	
C3	20000			A110196-4	BPD-02	DD-203	BYB6S2	B-120	5GA-S2	
C4	5000			A110196-7	BPD-005	DD-502	BYA10D5	B-250	5HK-D5	Note 1
C5	220			A110196-1	BPD-00022	DD-221	L10T22	B-221	5GA-T22	Note 2
C6	20000			A110196-4	BPD-02	DD-203	BYB6S2	B-120	5GA-S2	
C7	20000			A110196-5	BPD-02	DD-203	BYB6S2	B-120	5GA-S2	
C8	20000			A110196-5	BPD-02	DD-203	BYB6S2	B-120	5GA-S2	

Note 1. Some versions may use 220mmf in this application (Part #A-110196-1)
Note 2. Some versions may use 5000mmf in this application (Part #A-110196-7)

CONTROLS

ITEM No.	RATING RESISTANCE	RATING WATTS	REPLACEMENT DATA Silvertone PART No.	CENTRALAB PART No.	CLAROSTAT PART No.	IRC PART No.	MALLORY PART No.	INSTALLATION NOTES
R1A	1meg	½	A-110190-1	B-70	A47-1meg-Z	Q13-137	U53	Loudness
B	Shaft			Not Req.	FS-3	Not Req.	Not Req.	
R2A	1meg	½	A-110190-1	B-70	A47-1meg-Z	Q13-137	U53	Bass
B	Shaft			Not Req.	FS-3	Not Req.	Not Req.	
R3A	100K	½	A-110204-1	B-40	A47-100K-S	Q11-128	U41	Treble
B	Shaft			Not Req.	FS-3	Not Req.	Not Req.	
C	Switch			KR-1	SWE-12	76-1	US-26	

RESISTORS

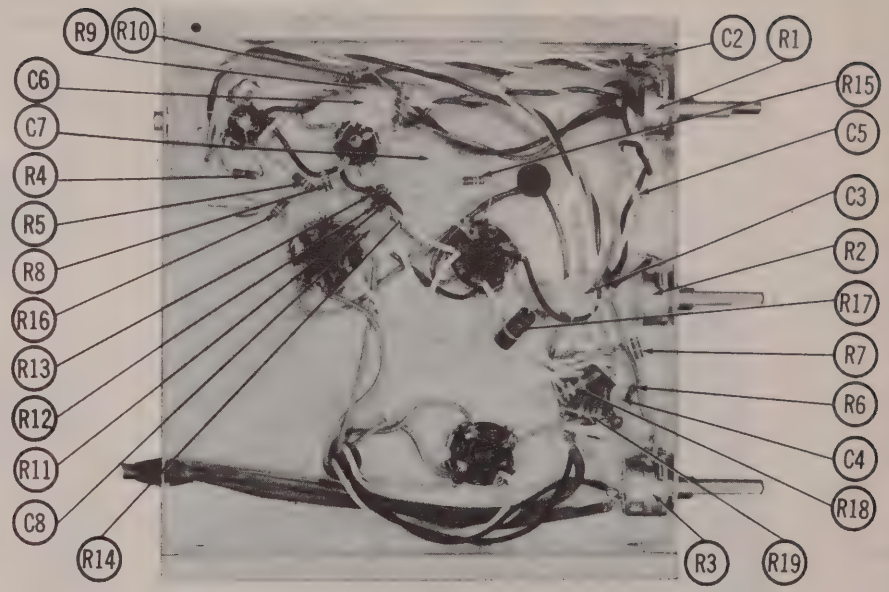
All wattages 1/2 watt, or less, unless otherwise listed.

ITEM No.	RATING OHMS	RATING WATT	Silvertone PART No.	NOTES
R4	10meg		BR17C106	
R5	270K		BR16C274	
R6	100K		BR16C104	
R7	4700Ω		BR16C472	
R8	470K		BR16C474	
R9	4700Ω		BR16C472	
R10	47K		BR16C473	
R11	470K		BR16C474	
R12	100K 5%		BR15C104	
R13	6800Ω		BR16C682	
R14	100K 5%		BR15C104	
R15	470K		BR16C474	
R16	470K		BR16C474	
R17	180Ω	2	BR16G181	
R18	3900Ω	1	BR16E392	
R19	470Ω	1	BR16E471	

SPEAKER

ITEM No.	TYPE SIZE	TYPE FIELD	TYPE V. C. IMP.	REPLACEMENT DATA Silvertone PART No.	REPLACEMENT DATA QUAM PART No.	NOTES
SP1	8"	PM	6-8Ω	A-132058 ①	8A31Z7 ①	① Used In Models 9315T, 9316T
	12"	PM		A-133631 ②		② Used In Models 9327, 9328
	5"	PM		A-126863 ③		③ 2 Used In Models 9327, 9328

CHASSIS-BOTTOM VIEW



TRANSFORMER (POWER)

ITEM No.	RATING PRI.	RATING SEC. 1	RATING SEC. 2	REPLACEMENT DATA Silvertone PART No.	Halldorson PART No.	Merit PART No.	Ram PART No.	Stancor PART No.	Thordarson PART No.	Triad PART No.
T1	117V @ .58A	540 VCT @ .090A	5V @ 2A	A-181267-1						
	SEC. 3	SEC. 4	SEC. 5							
	6.3V @ 1.5A									

TRANSFORMER (AUDIO OUTPUT)

ITEM No.	IMPEDANCE PRI.	IMPEDANCE SEC.	Silvertone PART No.	Halldorson PART No.	Merit PART No.	Ram PART No.	Stancor PART No.	Thordarson PART No.	Triad PART No.	NOTES
T2	4300Ω CT	6-8Ω	A-181268-1	22S88	A-2905①	AU-609	A-3870	22S88	S-55X	① Drill New Mounting Hole

MISCELLANEOUS

ITEM No.	PART NAME	Silvertone PART No.	NOTES
M1	Lamp	A-110195-1	#47

WIRING DATA

General-use Unshielded Hook-up Wire ..... Use BELDEN No. 8530 (Solid) Available in Ten Colors
8524 (Stranded) Available in Ten Colors

Power Cord ..... Use BELDEN No. 1765-B (6 Ft. Length)
1725-K (7½ Ft. Length)

PHOTOFACT* Folder

*TRADE MARK

TELECTRO
MODEL 300

TELECTRO
MODEL 300

GENERAL INFORMATION

Telectro Model 300 three-speed tape recorders can play back both monaural and stereophonic recordings.

Dual-track recordings can be made with a microphone or directly from a radio, phonograph, tuner, or TV set (by using patch cord Telectro T-150). Previous recordings are erased automatically as new material is recorded. Stereophonic prerecorded tape can be played if an additional speaker system (Telectro S-100) is used. This tape recorder will serve as the amplifier for a stereo record player when the Telectro CK-83 stereo phono adapter kit is used. The tape recorder can be used as a public address unit also.

The Model 300 operates at 7 1/2, 3 3/4, or 1 7/8 ips. Reel sizes up to 7 inches are accommodated. A two-position equalization switch, 7 1/2 ips and 3 3/4 or 1 7/8 ips, is provided. When both tracks are used, recording times are as follows:

Tape Length	7 1/2 ips	3 3/4 ips	1 7/8 ips
1,200 ft.	1 hour	2 hours	4 hours
1,800 ft.	1 1/2 hours	3 hours	6 hours
2,400 ft.	2 hours	4 hours	8 hours

This recorder operates on 60 cycles, 105-120 volts AC only and requires 115 watts.

Manufactured by:

Telectrosonic Corporation
35-18 37th Street
Long Island City, New York

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HOWARD W. SAMS & CO., INC., INDIANAPOLIS 6, INDIANA

C394

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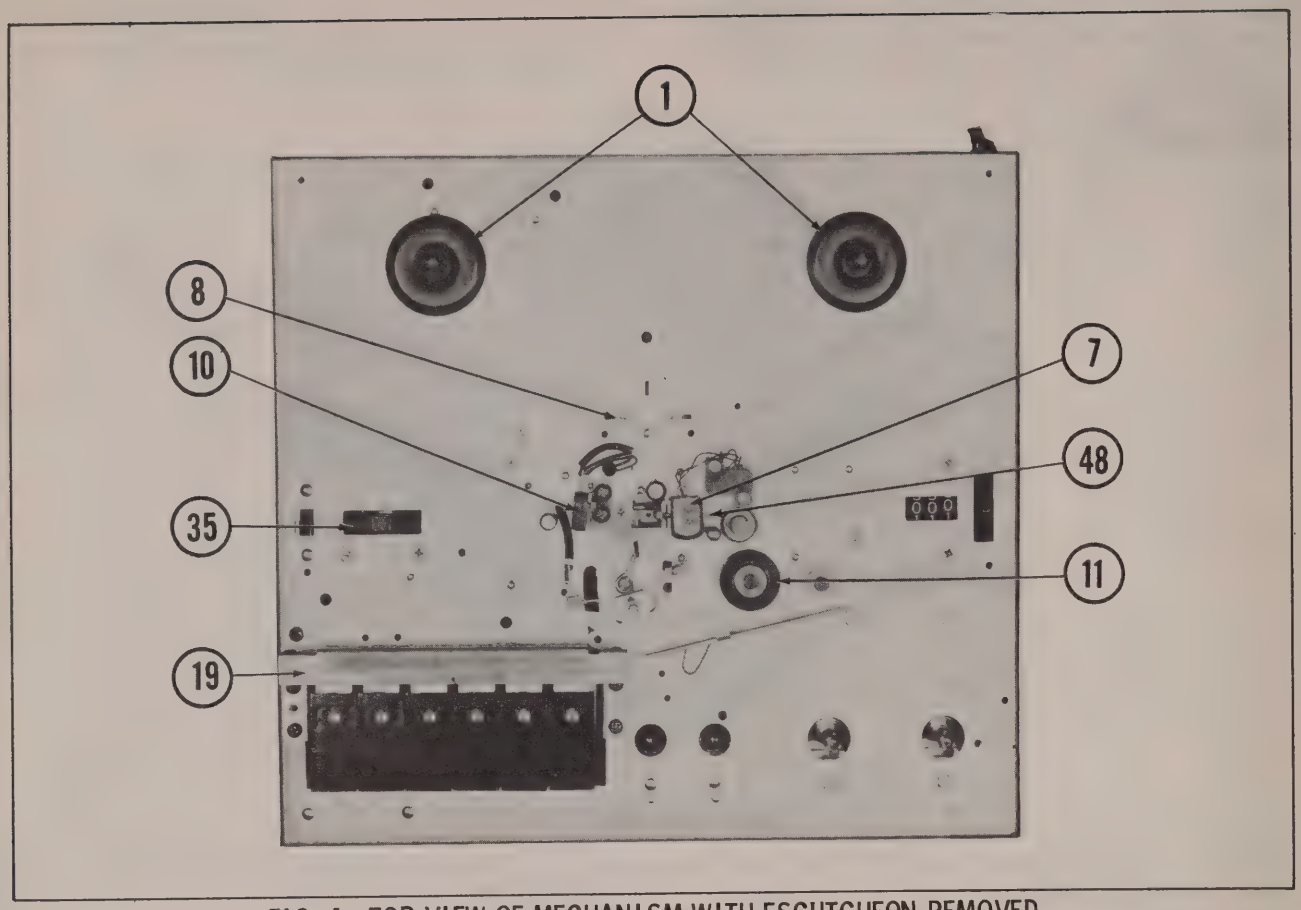


FIG. 1 TOP VIEW OF MECHANISM WITH ESCUTCHEON REMOVED

PREPARING FOR OPERATION

Place recorder on a level surface. Make sure the Power On-Off switch is in the Off position. Connect the power cord to a 117-volt AC wall outlet.

CAUTION: When operating the recorder, make sure it is not placed on a pile carpet or soft cushion, which will block air from circulating through the bottom metal grille and cause overheating.

FUNCTION OF CONTROLS

Power On-Off, Volume Control #1

Turns power on and off for entire unit. Regulates volume on monaural playback. Determines recording level. Controls first-channel volume on stereo playback.

Volume Control #2

Controls second-channel volume on stereo playback only.

Tone Control #1

Controls bass and treble response on monaural playback; first-channel tone on stereo playback. Does not function during Record.

Tone Control #2

Functions on second channel of stereo playback only.

Rotary Speed Selector

Selects desired tape speed: 7 1/2, 3 3/4, or 1 7/8 ips. This control cannot be turned unless push buttons are in Stop position.

Equalization Switch

Equalizes response for 7 1/2-ips speed in up position. Down position is for 3 3/4- and 1 7/8-ips speeds.

FUNCTION OF PUSH BUTTONS

In order for push buttons to work properly, they should be depressed firmly all the way. All buttons lock into position when depressed except Stop and Pause. The recorder can be changed from one function to another immediately except from Wind and Rewind to Play; in this case, the Stop button must first be depressed.

Stop

Applies brake to both spindles and returns all push buttons to neutral.

Record

Moves Play-Record switch into Record position.

Rewind

Returns tape rapidly to supply reel. Moves wind-rewind pulley, increasing tension on rewind belt which turns supply spindle.

Wind

Moves tape rapidly in Play and Record direction. Moves wind-rewind pulley, increasing tension on wind belt which turns take-up spindle.

Play

Moves tape for playback (or recording, if Record button is depressed simultaneously). Brings pressure roller and pressure pads into position against capstan and record head.

Pause

Stops tape by removing pressure roller from capstan and applying brake to spindles. Record or playback settings are not disturbed.

INPUT AND OUTPUT JACKS

Microphone Low Level

Used when recording with a microphone.

Radio Phono

A high level input used when recording from radio, phonograph, tuner, etc., by means of patch cord Telectro T-150.

Stereo Phono 1 and 2

Used for connecting phono output to recorder when playing stereophonic records by means of Telectro CK-83 stereo phono adapter kit.

External Speakers 1 and 2

Used when connecting external speakers for playback. No. 1 is used for monaural playback; when plugged in, it disconnects the internal speakers of the recorder. No 2 is used for channel two on stereo playback with the internal speakers of the recorder or with an external system plugged into jack #1.

OPERATING INSTRUCTIONS

To Thread Tape

Reel of tape goes on left spindle; empty spool on right. Thread tape in slot with shiny side toward operator. Take up slack in tape.

To Make Recording

Plug microphone into Low Level input jack. Set rotary speed selector at desired speed. Turn on power by rotating Power On-Off Volume control #1 clockwise until a click is heard. Allow approximately one minute for warm up. Depress Record button. Adjust Volume control #1 so that Level light flickers slightly when microphone is used. Hold Record button down and depress Play button until both are locked down. If both buttons will not stay down and/ or a buzzing noise is heard, tape is not properly threaded. See "To Thread Tape." At the end of a recording, depress Stop button; recorder stops automatically at end of tape.

When recording voice, hold the microphone six to eight inches from the mouth. When recording from a radio, phonograph, or TV set, place the microphone two or three feet from the loud-speaker.

To interrupt recording briefly, hold down the Pause button. When the Pause button is released, the machine will continue to record without further adjustment.

Since the Telectro Model 300 is a dual-track machine, only the top half of the tape is used during a recording. After the entire reel is recorded, the full take-up reel is turned over and placed on the supply spindle, and a new recording is made. This doubles the amount that can be recorded on a length of tape.

It is possible to record directly from radio, phonograph, tuner, or TV set by connecting the desired instrument to the tape recorder electrically with a patch cord (Telectro T-150). In this case, the microphone is not used. The patch cord is plugged into the High Level jack.

To Wind or Rewind Tape

Depress Wind or Rewind button. When desired point in tape is reached, depress Stop button; machine stops automatically at end of reel. Tape can be indexed by means of the counter so that material on tape can be quickly located.

To Play Monaural Recordings

Thread tape as described under "To Thread Tape". Locate desired point on tape by use of Wind or Rewind button. Depress Play button. Volume is regulated by Volume control #1. Tone is adjusted by Tone control #1. Volume control #2 should be turned fully counterclockwise while monaural tapes are being played.

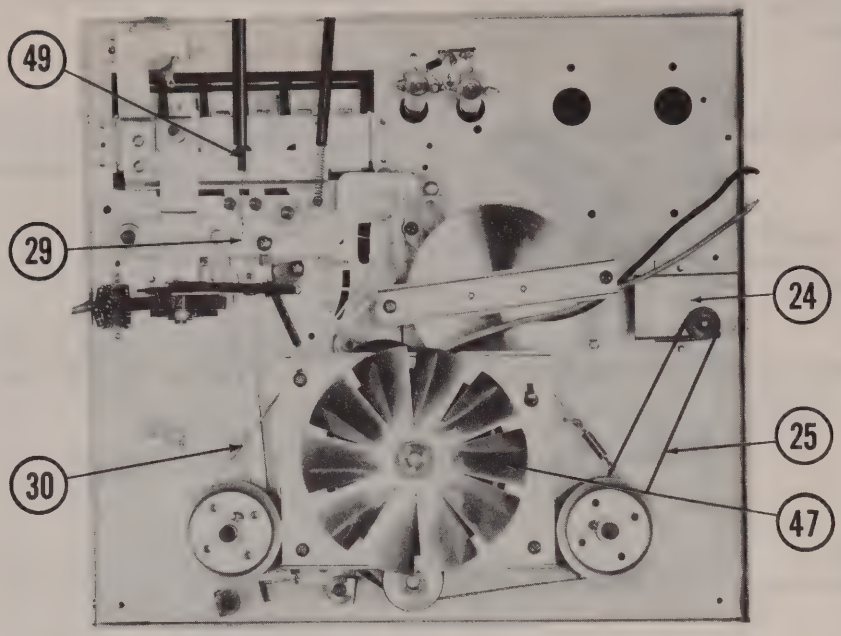


FIG. 2 BOTTOM VIEW OF MECHANISM

To Play Prerecorded Stereophonic Tapes

Only the first channel of stereo tapes can be heard by the speaker system of the Telectro Model 300. To supply sound for the second channel, a second speaker is required. The Telectro speaker system S-100 is designed to match the Model 300. This second speaker is plugged into External Speaker #2 jack. Volume and tone for the first channel are adjusted by Volume control #1 and Tone control #1; for the second channel by Volume control #2 and Tone control #2. For a stereo effect, the two channels must be balanced.

To Edit and Splice Tape

Since one track cannot be spliced without affecting the other, recordings to be edited should be limited to one track. Unwanted portions can be cut out with scissors, and the desired selections joined together. Tape should be cut at a slight diagonal and the ends joined with splicing tape on the glossy side. Excess splicing tape should be trimmed from the side of the tape.

NOTE: Use splicing tape only. Do not use regular cellophane tape.

To Use as a Public Address System

Plug microphone into Stereo Phono 1. The internal speaker of the tape recorder can be used, or an external system can be plugged into External Speaker 1. Avoid pointing the speakers toward the microphone, because feedback will produce howl.

DISASSEMBLY

To Remove Recorder from Cabinet

1. Remove escutcheon from input and output jacks.
2. Remove four screws from bottom of cabinet and four bolts from side.
3. Set case on side with speaker down and pull mechanism forward gently.
4. Unsolder the speaker leads.
5. To reassemble, reverse the foregoing procedure.

ADJUSTMENTS

To Align Erase Head

Loosen mounting nuts, and set erase head so that top of head gap is even with top of tape. Tighten mounting nuts securely.

To Align Record-Playback Head

1. Put head in "up" position by pushing down left tab of head mounting bracket assembly (8).

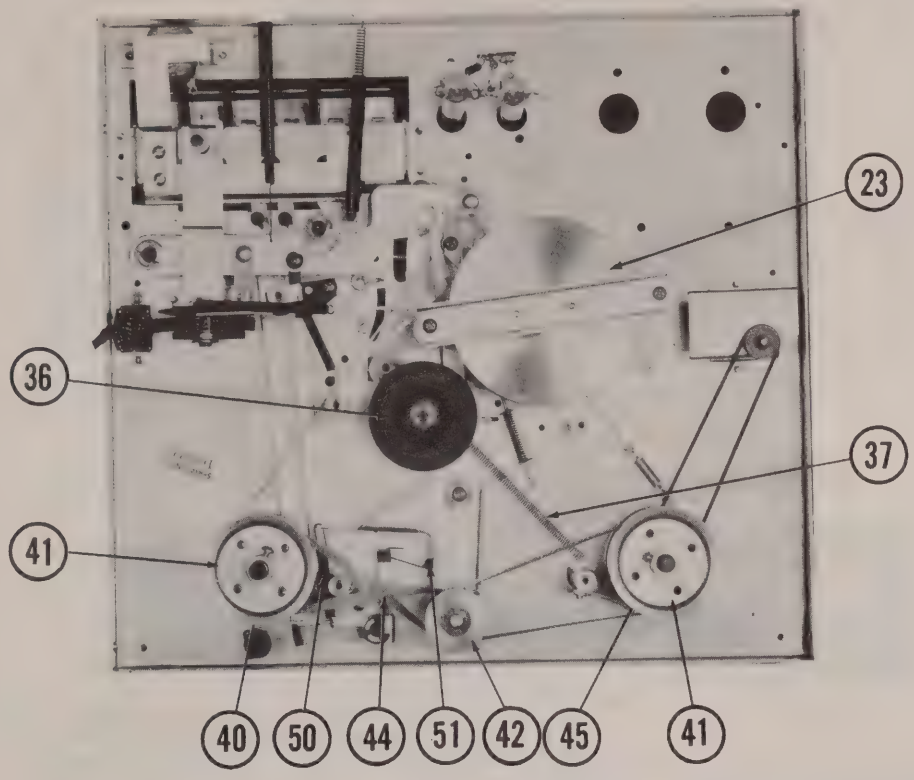


FIG. 3 BOTTOM VIEW OF MECHANISM WITH MOTOR REMOVED

2. Loosen mounting nuts at side of head mounting bracket assembly (8). Set top of upper gap evenly with top of tape. Tighten mounting nuts securely.

3. While playing a prerecorded alignment tape, adjust for maximum output by turning alignment screw (48).

4. Repeat Steps 2 and 3.

To Adjust Bias Oscillator

1. Disconnect black lead of recording head from terminal board, and place a 100-ohm, 1% composition resistor in series with the head.

2. Connect VTVM (with RF probe) across the 100-ohm resistor.

3. Adjust bias-oscillator trimmer (C20) for 0.03 volt AC reading on VTVM.

4. Remove 100-ohm resistor and reconnect head lead.

CLEANING

Capstan roller, shaft, and recording head should be cleaned of dirt and foreign matter occasionally with a piece of cloth moistened with alcohol.

LUBRICATION

The Telectro Model 300 recorder does not require lubrication under normal operation. When unit is disassembled, wipe all bearings with a clean, soft cloth and apply a thin film of oil to their surfaces.

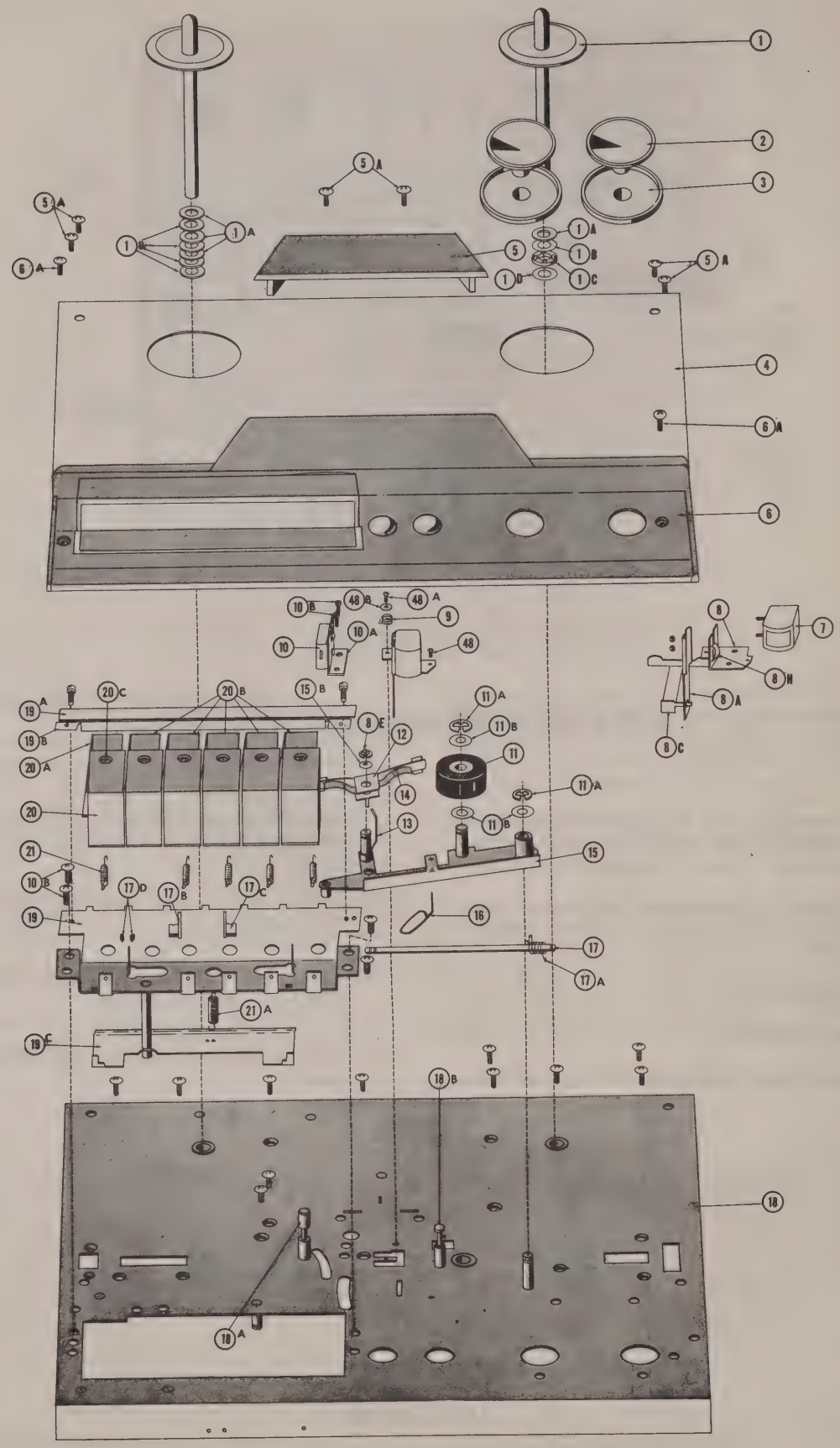


FIG. 4A EXPLODED VIEW OF PARTS ABOVE BASEPLATE

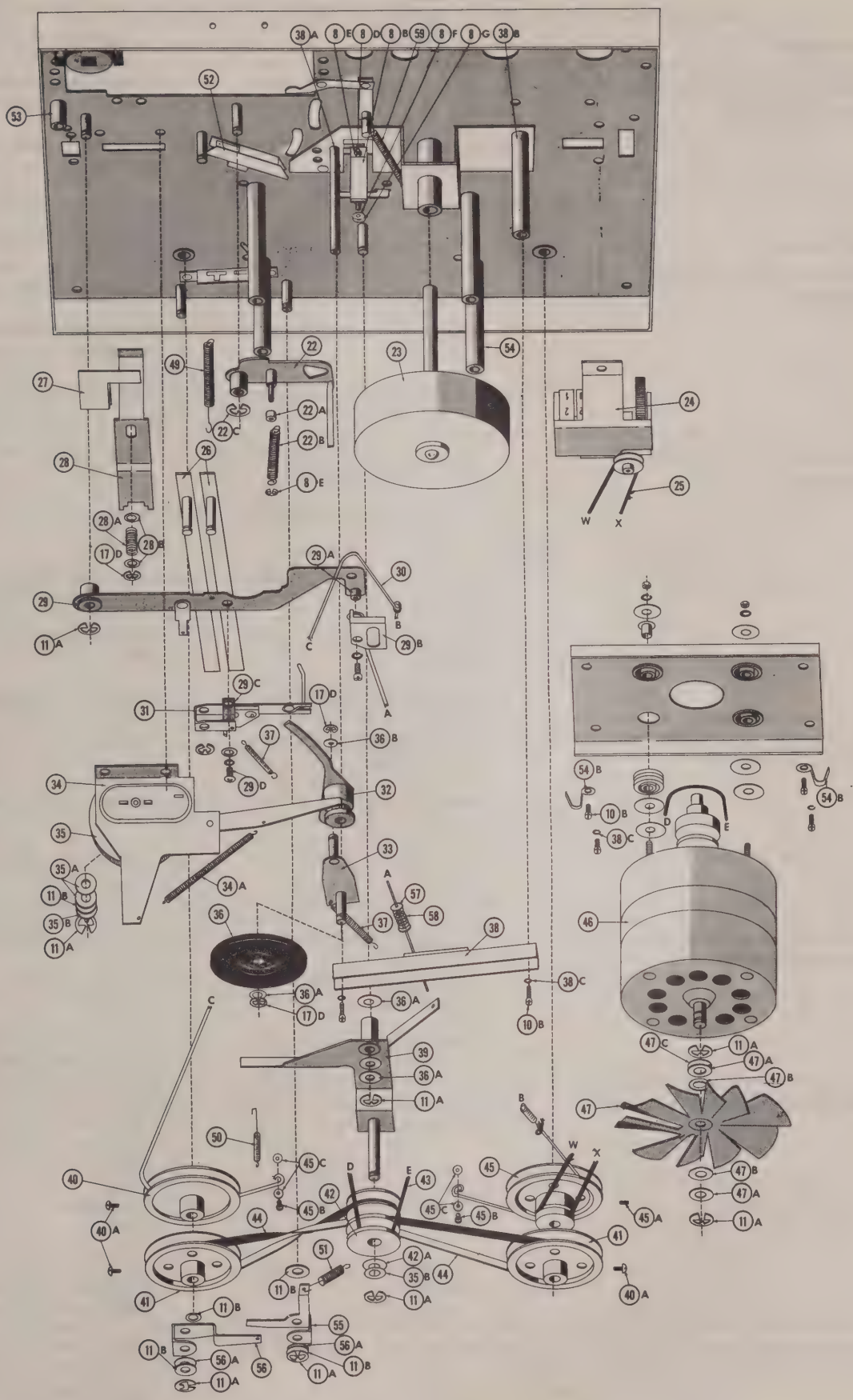


FIG. 4B EXPLODED VIEW OF PARTS BELOW BASEPLATE

TROUBLE CHART

Symptom	Cause	Remedy
Capstan fails to revolve when Play button is depressed.	1. Worn or dirty idler wheel (36).	1. Clean idler wheel (36) with alcohol, or replace.
	2. Idler wheel spring (37) missing.	2. Replace idler wheel spring (37).
	3. Flywheel (23) binds.	3. Clean and lubricate bearing surfaces.
Tape fails to move when Play button is depressed.	1. Worn or dirty capstan roller (11).	1. Clean capstan roller (11) with alcohol, or replace.
	2. Supply spindle (1) binds.	2. Clean and lubricate spindle shaft.
	3. Broken or missing toggle spring (16).	3. Replace toggle spring (16).
Tape fails to move when Wind button is depressed.	1. Take-up spindle pulley (41) loose on shaft.	1. Tighten pulley set screw.
	2. Take-up spindle belt (44) missing.	2. Replace take-up spindle belt (44).
	3. Idler pulley assembly (42) binds.	3. Clean and lubricate idler pulley assembly (42).
	4. Idler drive O-ring (43) missing.	4. Replace idler drive O-ring (43).
	5. Wind spring (50) missing.	5. Replace wind spring (50).
Tape fails to move when Rewind button is depressed.	1. Rewind spindle pulley (41) loose on shaft.	1. Tighten pulley set screw.
	2. Rewind spindle belt (44) missing.	2. Replace spindle belt (44).
	3. Rewind spring (51) missing.	3. Replace rewind spring (51).
Brakes fail to function when Stop button is depressed.	1. Brake spring (49) missing.	1. Replace brake spring (49).
	2. Dacron band brake (30) lacks tension.	2. Tighten Dacron band brake (30).
	3. Brake arm assembly (29A) and (29B) damaged.	3. Replace brake arm assembly (29A) and (29B).
Automatic Stop fails to function.	1. Automatic stop switch (52) out of position.	1. Adjust automatic stop switch (52) so that it trips when arm passes line of tape travel.
Unit fails to record.	1. Foreign matter on record head (7).	1. Clean record head (7) with alcohol.
	2. Defective electrical components.	2. Check voltages and resistances. Replace defective components.
Recordings distorted.	1. Dirty drive mechanism.	1. Clean drive mechanism with alcohol; or replace motor pulley (46), idler wheel (36), flywheel (23), or capstan roller (11).

MECHANICAL PARTS LIST

Ref. No.	Part No.	Description
1	TA-1250	Spindle (2 Required)
1A		.315 I.D. x ½ O.D. x .032 Th'k. Fiber Washer
1B		.315 I.D. x 9/16 O.D. x .010 Th'k. Steel Washer
1C	TB-809	Bearing Ball Thrust
2	TK-246	Tone Control Knob(2 Required)
3	TA-1255	Volume Control Knob(2 Required)
4	TP-1005	Motor Board Dress Plate
5	TE-276-2	Rear Escutcheon
5A		#6-32 x 3/8 LG. Phil. oval Hd. M. Screw
6	TA-1254	Front Escutcheon
6A		#6-32 x 7/8 Lg. Phil. Oval Hd. M. Screw
7	TH-557	Stereo Record-Playback Head
8	TA-2028	Bracket-Sound Head Mounting
8A	TP-1156	Plate Sliding-Sound Head Lifting
8B	TB-2019	Bracket Mtg. -Sound Head Swivel Plate
8C	TP-1157	Plate Swivel-Sound Head Lifting
8D	TS-2086	Shaft Swivel-Sound Head Lifting
8E		5133-12 Retaining Ring
8F		.130 I.D. x 3/8 O.D. x .032 Th'k. Fiber Washer
8G		C1037-012-27 Speed Nut
8H	TS-1755	Spring-Record Head
9	TS-2080	Spring-Record Head Lifting
10	TH-556	Erase Head
10A	TB-1035	Bracket Erase Head
10B		#6-32 x 3/8 LG. Phil. B.H.H. Screw
11	TA-1002	Capstan Roller
11A		5133-25 Retaining Ring
11B		.255 I.D. x ½ O.D. x .010 Th'k. Stl. Washer
12	TA-1348	Bracket Pressure Pad Sub-Assy.
13	TW-429	Wire Tape Release
14	TS-1949	Pressure Pad Spring
15	TA-1161	Capstan Roller Plate Assembly
16	TS-1964	Toggle Spring
17	TA-1227	Push Button Rod Assembly
17A	TS-1987	Tension Interlock Spring
17B	TA-1110	Cam Push Button, Left
17C	TA-1226	Cam Push Button, Right
17D		5133-18 Retaining Ring
18	TB-983	Base Plate Assembly
18A	TG-461	Tape Guide, Right
18B	TG-476	Tape Guide, Left
19	TA-1349	Bracket Push Button Assembly
19A	TR-1537	Retainer Push Button Lever
19B	TS-2025	Shim-Lever Push Button
19C	TL-355	Latch-Push Button Lever
20	TB-1010	Push Button (6 Required)
20A	TL-354-1	Lever-Push Button-Stop
20B	TL-35A	Lever-Push Button(5 Required)
21	TS-1985	Spring-Push Button(5 Required)
21A	TS-1984	Spring-Latch
22	TA-1176	Play Lever & Cam Assembly
22A	TR-1416	Roller
22B	TS-1989	Spring-Cam Lever
23	TF-324	Flywheel
24	TA-1350	Counter Assembly
25	TR-1614	Counter Drive O-Ring
26	TA-1171	Push Rod Assembly
27	TL-361	Solenoid Arm
28	TL-358	Record Lever Arm
28A	TS-1986	Spring Record Switch
28B		.192 I.D. x 3/8 O.D. x .010 Th'k. Stl Washer
29	TA-1173	Brake Arm Assembly
29A	TS-1962	Spacer
29B	TB-1050	Bracket-Brake Cord Retainer
29C	TA-1169	Actuator-Automatic Stop
29D		#6-32 x 3/16 Lg. B.H.M Screw
30	TB-1093	Dacron Band Brake, 24"
30A	TS-2085	Spring-Brake Cord
31	TA-1170	Automatic Shut Off Bracket Ass'y.
32	TA-1172	Idler Arm Support Assembly
33	TA-1174	Idler Arm Pivot
34	TA-1251	Speed Selector Bracket Assembly
34A	TS-1980	Spring-Selector Arm
35	TC-1741	Speed Selector Wheel
35A		.255 I.D. x ½ O.D. x .062 Th'k. Bakelite Washer
35B		.255 I.D. x 13/32 O.D. x .015 Th'k Fish Paper Washer
36	TW-424	Idler Wheel
36A		.255 I.D. x ½ O.D. x .010 Th'k. Cambric Washer
36B		.203 I.D. x 3/8 O.D. x .031 Th'k. Steel Washer
37	TS-1993	Spring-Idler Wheel & Automatic Stop
38	TA-1252	Flywheel Thrust Plate Assembly
38A	TS-1855	Stud-Idler
38B	TS-1908	Stud-Support Flywheel
38C		#6 Lockwasher Split, Non-tangling
39	TA-1163	Arm Pulley Assembly
40	TA-1183	Brake Pulley
40A		#6-32 x 3/16 Lg. Slotted R.H.M. Screw
41	TA-265	Spindle Pulley
42	TA-1208	Idler Pulley
42A		.255 I.D. x ½ O.D. x 1/32 Th'k. Fish Paper Washer
43	TR-1548	Idler Drive O-Ring
44	TB-1018	Spindle Belt
45	TA-1183	Counter & Brake Pulley
45A		#6-32 x 1/8 Lg. Socket Set Screw
45B		#6-32 x 1/4 Lg. Phil. B.H.M. Screw
45C		#6 x 7/16 O.D. x 1/32 Th'k Steel Washer
46	TA-1253	Motor With Pulley Assembly
47	TF-342	Fan
47A		.250 I.D. x 11/16 O.D. x 1/16 Th'k. Bakelite Washer
47B		1/4 I.D. x 11/16 O.D. x 1/16 Th'k. Felt Washer
47C	TW-430	Washer Bowed
48		#2-56 x 5/16 Lg. Alignment Screw
49	TS-1990	Spring-Brake
50	TS-2028	Spring-Wind
51	TS-1981	Spring-Rewind
52	TS-1999	Switch-Automatic Stop
53	TS-1935	Spacer Chassis Stand Off
54	TS-1856-1	Stud-Motor Support
54A		#20 Zieric Lug With #6 Hole
55	TL-346	Lever-Push Rod
56	TL-367	Link Rewind Spring
56A		.315 I.D. x ½ O.D. x .032 Th'k. Bakelite Washer
57	TA-1225	Idler Release Assembly
58	TS-2041	Spring-Compression (Take Up)
59	TS-1988	Spring-Pause

ELECTRICAL PARTS LIST

Ref. No.	Part No.	Description

TUBES

V1	TT-298	12AX7, Preamplifier, Channel 1
V2	TT-298	12AX7, AF Amp. and Phase Inv. Channel 1
V3	TT-306	50C5 Output and Bias Oscillator Channel 1
V4	TT-306	50C5 Output and Bias Oscillator Channel 1
V5	TT-298	12AX7, Preamplifier, Channel 2
V6	TT-298	12AX7, AF Amp. and Phase Inv. Channel 2
V7	TT-306	50C5 Output, Channel 2
V8	TT-306	50C5 Output, Channel 2

CAPACITORS (ELECTROLYTIC)

C1	TC-1768	80-40mfd@150V
C2	TC-1767	20-20-20mfd@200V
C3		2mfd@70V
C4		50mfd@1V
C5		50mfd@1V

CAPACITORS (FIXED)

C6		50mmf, N750
C7		50mmf, N750
C8		.02mfd, Ceramic
C9		.01mfd, Ceramic
C10		.02mfd, Ceramic
C11		.02mfd, Ceramic
C12		5000mmf, 20% Ceramic
C13		.02mfd, 20% Ceramic
C14		.05mfd, Ceramic
C15		.02mfd, Ceramic
C16		.02mfd, Ceramic
C17		33mmf, 20%, Ceramic
C18		33mmf, 20%, Ceramic
C19		.003mfd@300V, Ceramic
C20		Trimmer, 30-1000mmf
C21		300mmf, Ceramic
C22		.02mfd, Ceramic
C23		.01mfd, 20%, Ceramic
C24		.02mfd, Ceramic
C25		.02mfd, Ceramic
C26		.05mfd, @1000V, Ceramic
C27		.01mfd, 20%, Ceramic
C28		.01mfd, 20%, Ceramic
C29		.02mfd, Ceramic
C30		.02mfd, Ceramic
C31		.047mfd@1000V, Ceramic
C32		.01mfd, Ceramic

CONTROLS

R1A	TC-1721	600K Volume Control, Channel 1
B		500K Tone Control, Channel 1
C		Switch, Power On and Off
R2A	TC-1721	600K Volume Control, Channel 2
B		500K Tone Control, Channel 2

RESISTORS

R3	470K ½W 10%
R4	47K ½W 10%
R5	4.7meg ½W 10%
R6	6800Ω ½W 10%
R7	220K 1W 10%
R8	680K ½W 10%
R9	330K ½W 10%
R10	1meg ½W 10%
R11	4700Ω ½W 10%
R12	20K ½W 10%
R13	150K ½W 10%
R14	10meg ½W 10%
R15	1500Ω ½W 10%
R16	100K ½W 10%
R17	10meg ½W 10%
R18	3300Ω ½W 10%
R19	100K ½W 10%
R20	3.3meg ½W 10%
R21	100K ½W 10%
R22	1meg ½W 10%
R23	470K ½W 10%
R24	470K ½W 10%
R25	470K ½W 10%
R26	220K ½W 10%
R27	470K ½W 10%
R28	470K ½W 10%
R29	22K ½W 10%
R30	22K ½W 10%
R31	180Ω 1W 10%
R32	180Ω 1W 10%
R33	1000Ω 1W 10%
R34	6800Ω ½W 10%
R35	220K 1W 10%
R36	20K ½W 10%
R37	4700Ω ½W 10%
R38	10meg ½W 10%
R39	1500Ω ½W 10%
R40	100K ½W 10%
R41	10meg ½W 10%
R42	100K ½W 10%
R43	1meg ½W 10%
R44	470K ½W 10%
R45	470K ½W 10%
R46	470K ½W 10%
R47	470K ½W 10%
R48	22K ½W 10%
R49	22K ½W 10%
R50	180Ω 1W 10%
R51	180Ω 1W 10%
R52	6.8Ω 2W 10%
R53	1000Ω 1W 10%
R54	50Ω 10W WW
R55	10K ½W 10%
R56	68K ½W 10%
R57	100Ω ½W 10%
R58	100Ω ½W 10%
R59	22Ω ½W 10%
R60	22Ω ½W 10%

Ref. No.	Part No.	Description

TRANSFORMERS

T1	TT-713	Power
T2	TT-674	Audio Output, Channel 1
T3	TT-674	Audio Output, Channel 2

SPEAKERS

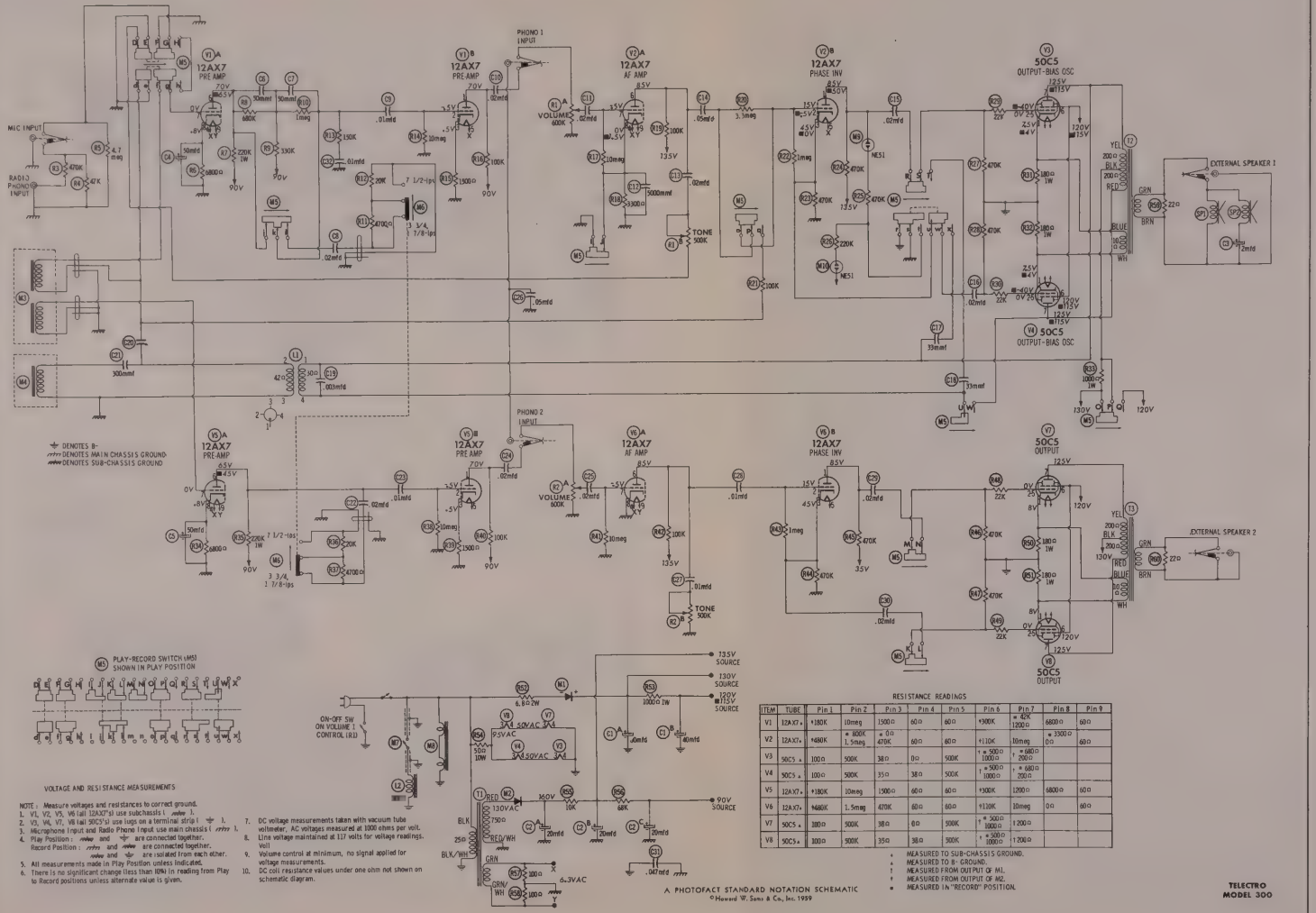
SP1	TS-1928	6" PM, Woofer
SP2	TS-2000	3½" PM, Tweeter

COILS

L1	TC1696	Bias Oscillator
L2		Automatic Stop Relay

MISCELLANEOUS

M1	TR-1714	Selenium Rectifier, 200ma
M2	TR-1631	Silicon Rectifier, 25ma
M3	TH-557	Record-Playback Head, Stereo, 4-Track
M4	TH-556	Erase Head
M5	TS-1959	40 Contact Slide Switch, Play-Record
M6	TS-1997	DPDT Slide Switch, Equalize
M7	TS-1999	Leaf SPST Switch, Auto Stop
M8		Motor
M9	TL-174	NE 51, Record Level Indicator
M10	TL-174	NE 51, Record On Indicator
	TC-1740	Line Cord with Plug
	TM-410	Microphone and Cable



VOLTAGE AND RESISTANCE MEASUREMENTS

NOTE: Measure voltages and resistances to correct ground.

1. V1, V2, V5, V6 (all 12AX7's) use subchassis (⏚).
2. V3, V4, V7, V8 (all 50C5's) use lugs on a terminal strip (⏚).
3. Microphone Input and Radio Phono Input use main chassis (⏚).
4. Play Position: ⏚ and ⏚ are connected together.
   Record Position: ⏚ and ⏚ are connected together.
   ⏚ and ⏚ are isolated from each other.
5. All measurements made in Play Position unless indicated.
6. There is no significant change (less than 10%) in reading from Play to Record positions unless alternate value is given.
7. DC voltage measurements taken with vacuum tube voltmeter; AC voltages measured at 1000 ohms per volt.
8. Line voltage maintained at 117 volts for voltage readings.
9. Volume control at minimum, no signal applied for voltage measurements.
10. DC coil resistance values under one ohm not shown on schematic diagram.

RESISTANCE READINGS

ITEM	TUBE	Pin 1	Pin 2	Pin 3	Pin 4	Pin 5	Pin 6	Pin 7	Pin 8	Pin 9
V1	12AX7 ▲	+180K	10meg	1500Ω	60Ω	60Ω	+300K	* 42K 1200Ω	6800Ω	60Ω
V2	12AX7 ▲	+680K	* 800K 1.5meg	▲ 0Ω 470K	60Ω	60Ω	+110K	10meg	* 3500Ω 0Ω	60Ω
V3	50C5 ▲	100Ω	500K	38Ω	0Ω	500K	† * 500Ω 1000Ω	† * 680Ω 200Ω		
V4	50C5 ▲	100Ω	500K	35Ω	38Ω	500K	† * 500Ω 1000Ω	† * 680Ω 250Ω		
V5	12AX7 ▲	+180K	10meg	1500Ω	60Ω	60Ω	+300K	1200Ω	6800Ω	60Ω
V6	12AX7 ▲	+680K	1.5meg	470K	60Ω	60Ω	+110K	10meg	0Ω	60Ω
V7	50C5 ▲	100Ω	500K	38Ω	0Ω	500K	† * 500Ω 1000Ω	†200Ω		
V8	50C5 ▲	100Ω	500K	35Ω	38Ω	500K	† * 500Ω 1000Ω	†200Ω		

▲ MEASURED TO SUB-CHASSIS GROUND.
▲ MEASURED TO B- GROUND.
† MEASURED FROM OUTPUT OF M1.
† MEASURED FROM OUTPUT OF M2.
* MEASURED IN "RECORD" POSITION.

A PHOTOFACT STANDARD NOTATION SCHEMATIC
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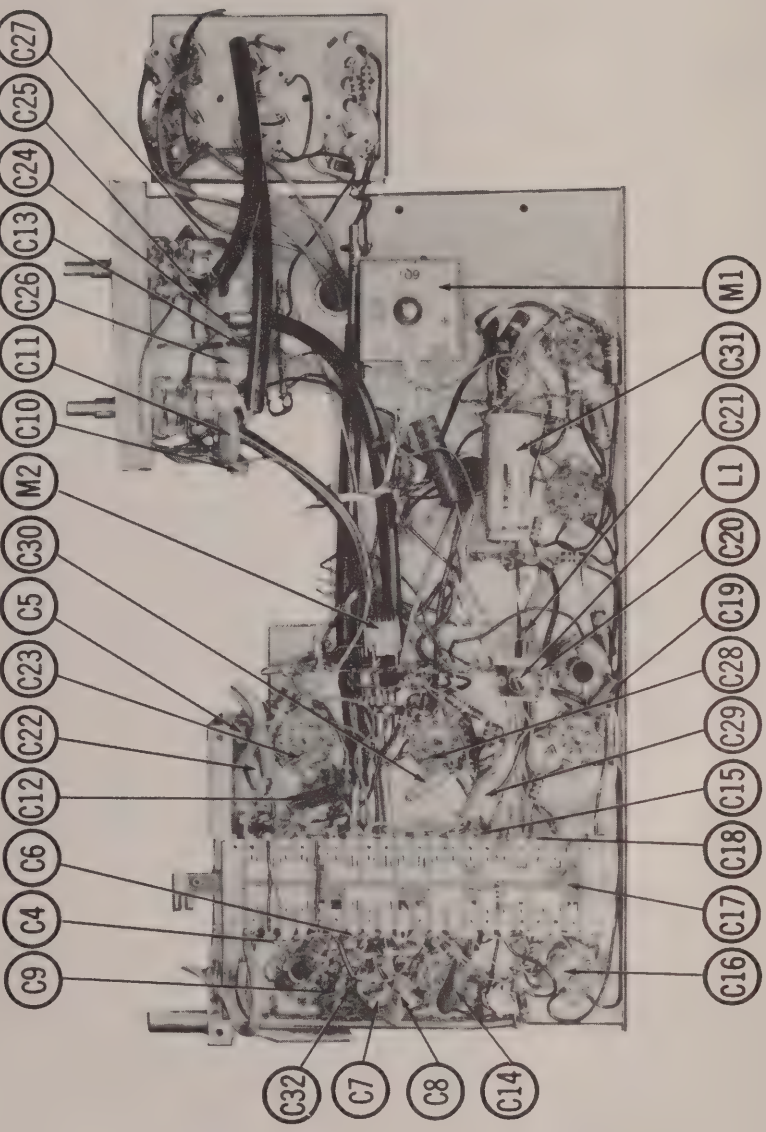
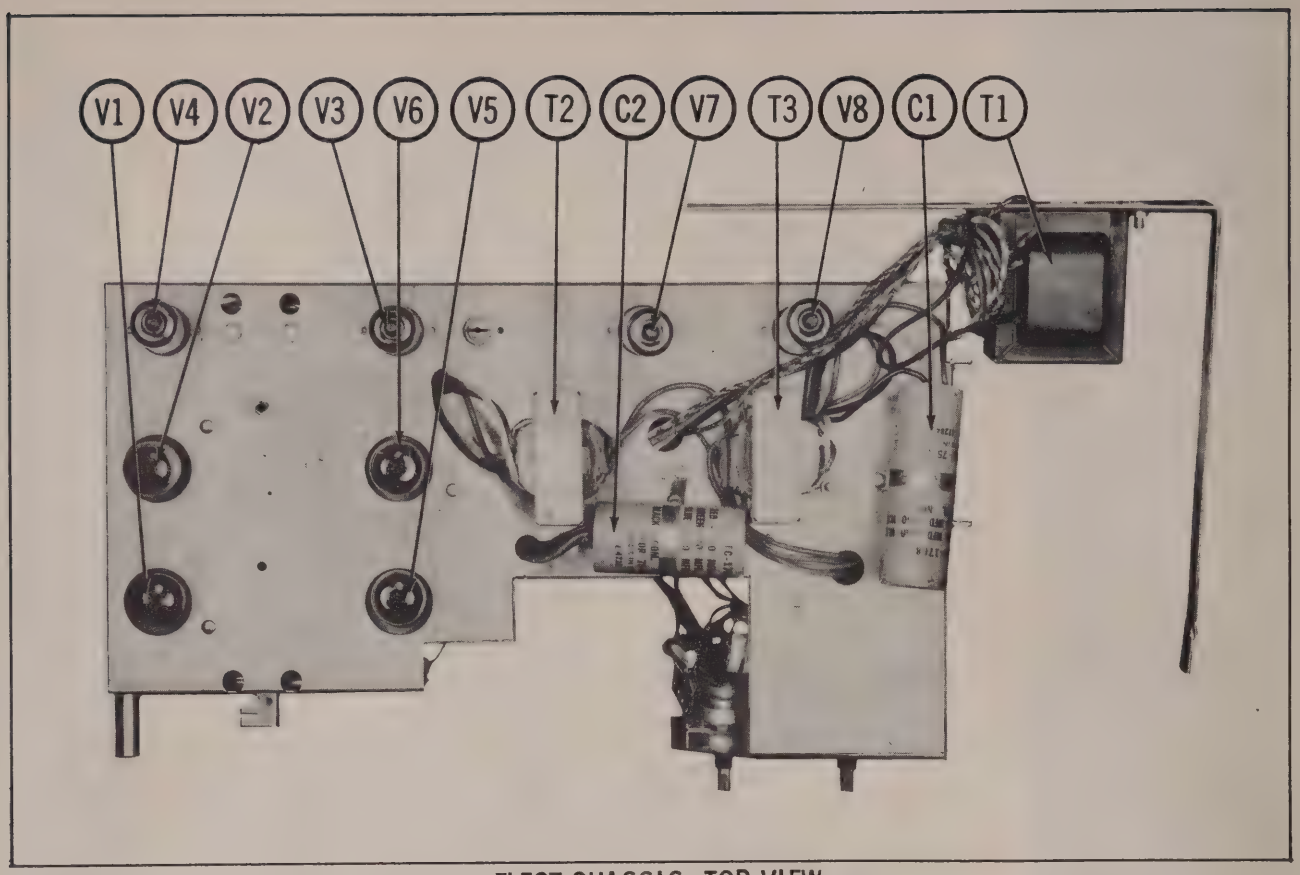
TELECTRO MODEL 300

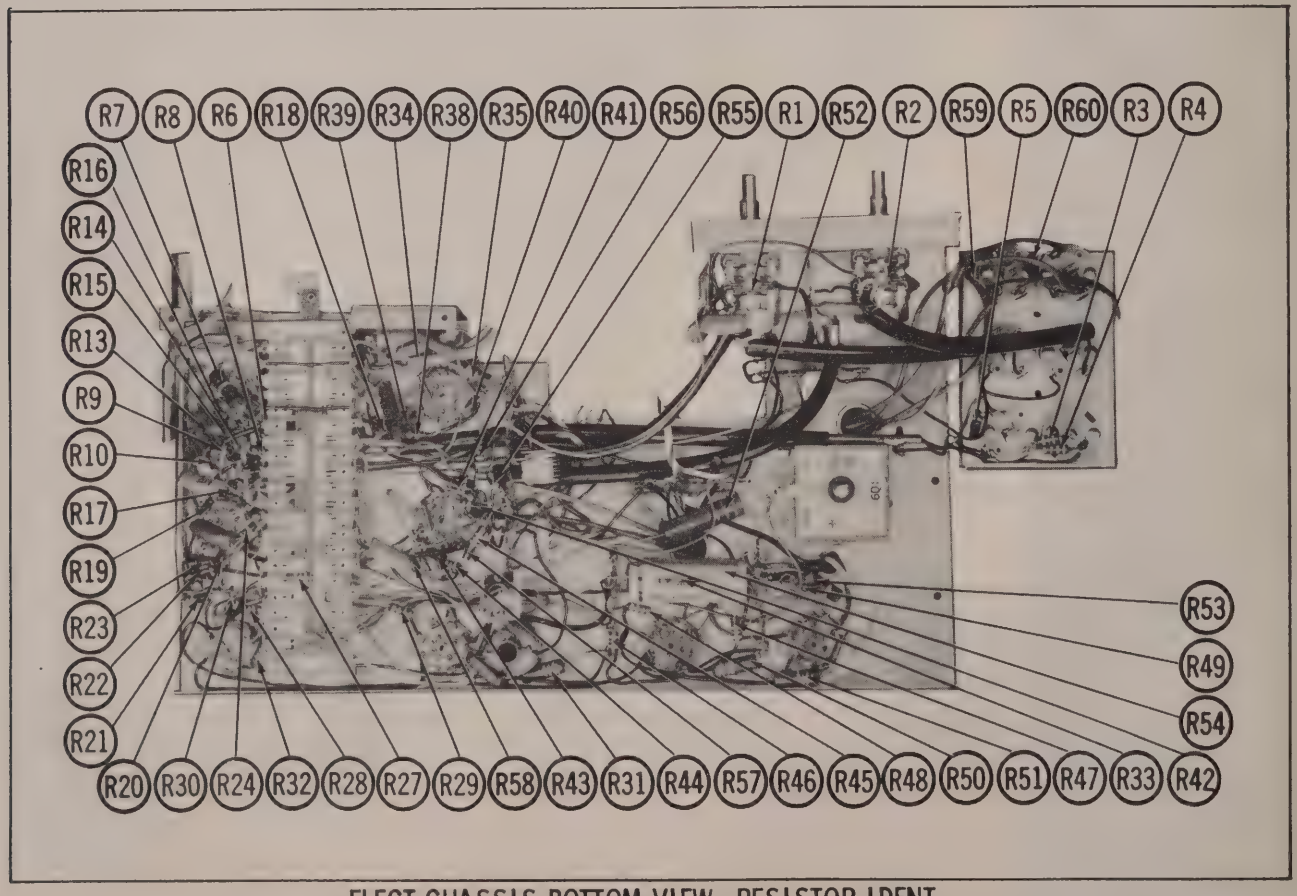


ELECT CHASSIS BOTTOM VIEW - CAPACITOR, INDUCTOR & MISC IDENT.

FOLDER 14



ELECT CHASSIS - TOP VIEW



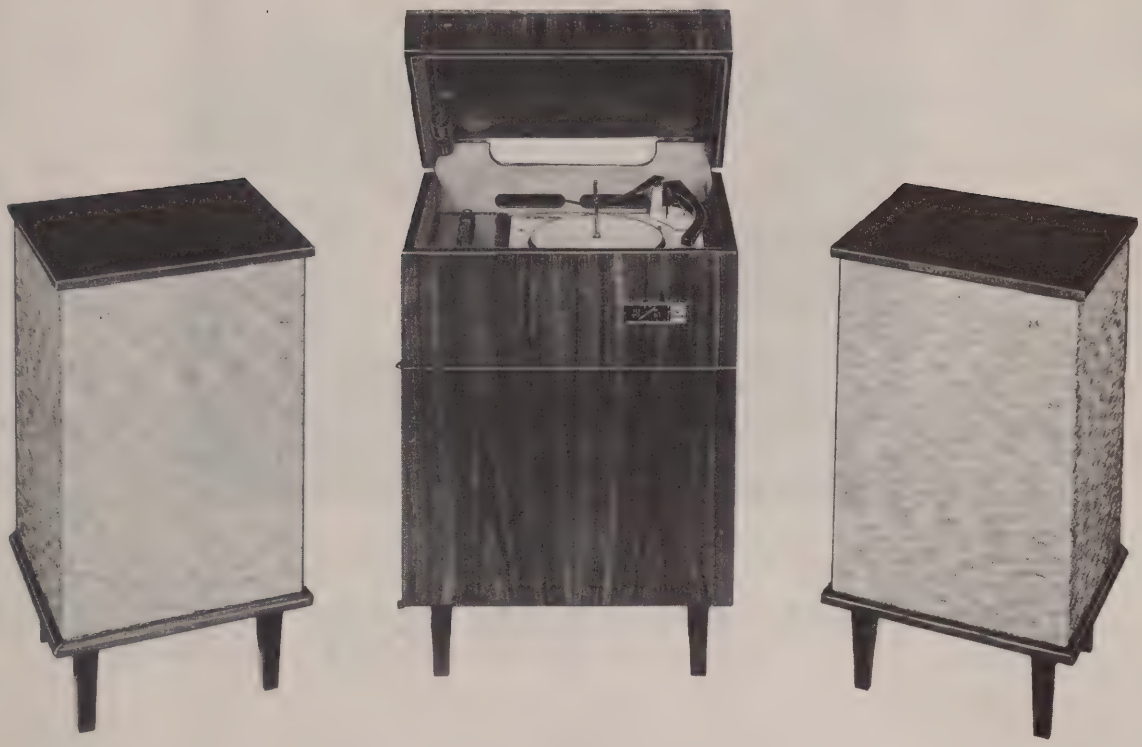
ELECT CHASSIS BOTTOM VIEW - RESISTOR IDENT.

PHOTOFACT* Folder

EIA MEMBER ELECTRONIC INDUSTRIES ASSOCIATION

V-M
MODEL 580

V-M
MODEL 580



V-M
MODEL 580

TRADE NAME	V-M Model 580
MANUFACTURER	V-M Corp., Benton Harbor, Michigan
TYPE SET	AC Operated 8 Tube Stereo Amplifier With 4 Speed Automatic Record Changer
POWER SUPPLY	110-120 Volts AC, 60 Cycles RATING 88 Watts, .87 Amp. @ 117 Volts AC (Less Motor)

FOR SERVICE INFORMATION ON RECORD CHANGER — SEE V-M 1201 — PHOTOFACT SET 436 FOLDER 18

HOWARD W. SAMS & CO., INC. Indianapolis 6, Indiana

The listing of any available replacement part herein does not constitute in any case a recommendation, warranty or guaranty by Howard W. Sams & Co., Inc., as to the quality and suitability of such replacement part. The numbers of these parts have been compiled from information furnished to Howard W. Sams & Co., Inc., by the manufacturers of the particular type of replacement part listed. Reproduction or use, without express permission, of editorial or pictorial content, in any manner, is prohibited. No patent liability is assumed with respect to the use of the information contained herein. © 1959 Howard W. Sams & Co., Inc., Indianapolis 6, Indiana. Printed in U.S. of America

JT249

PARTS LIST AND DESCRIPTIONS

TUBES (GENERAL ELECTRIC, SYLVANIA)

ITEM No.	USE	TYPE
V1	Left Channel AF Amp.	ECC83/12AX7
V2	Left Channel Phase Inv. - Right Channel Phase Inv.	ECC83/12AX7
V3	Left Channel Output	6AQ5
V4	Left Channel Output	6AQ5

ITEM No.	USE	TYPE
V5	Right Channel AF Amp.	ECC83/12AX7
V6	Right Channel Output	6AQ5
V7	Right Channel Output	6AQ5
V8	Rectifier	EZ81/6CA4

ELECTROLYTIC CAPACITORS

ITEM No.	RATING		REPLACEMENT DATA						
	CAP.	VOLT.	V-M PART No.	AEROVOX PART No.	CORNELL-DUBILIER PART No.	MALLORY PART No.	PYRAMID PART No.	SPRAGUE PART No.	NOTES
C1A	▲40	450	12116	AFH4-18-10	D0171	FP446	TMQ-18 TD40-450	TVL-4771.8	
B	30	450							
C	■10	450							
D	▲10	450							
C2A	10	350	①	AFH3-124	C0240	FP330.5	TMT-27	TVL-3739	
B	10	350							
C	10	25							
C3A	10	350	①	AFH3-124	C0240	FP330.5	TMT-27	TVL-3739	
B	10	350							
C	10	25							

① Part #12117 may be used in some versions.

FIXED CAPACITORS

Capacity values given in the rating column are in mfd. for Paper Capacitors, and in mmfd. for Mica and Ceramic Capacitors.

ITEM No.	RATING			REPLACEMENT DATA						NOTES
	CAP.	VOLT	TOL	V-M PART No.	AEROVOX PART No.	CENTRALAB PART No.	CORNELL-DUBILIER PART No.	MALLORY PART No.	SPRAGUE PART No.	
C4	10000			12062	BPD-01	DD-103	BYA10S1	B-110	5HK-S1	
C5	10000			12062	BPD-01	DD-103	BYA10S1	B-110	5HK-S1	
C6	33			12047	SI 33	D6-330	L10Q33	UC-433	5GA-Q33	
C7	10000			12062	BPD-01	DD-103	BYA10S1	B-110	5HK-S1	
C8	10000			12062	BPD-01	DD-103	BYA10S1	B-110	5HK-S1	
C9	10000			12062	BPD-01	DD-103	BYA10S1	B-110	5HK-S1	
C10	2.0	100		12069	P282Z-2		WMF1W2E	GTM-12	118P20502S2	
C11	10000			12062	BPD-01	DD-103	BYA10S1.	B-110	5HK-S1	
C12	10000			12062	BPD-01	DD-103	BYA10S1	B-110	5HK-S1	
C13	33			12047	SI 33	D6-330	L10Q33	UC-433	5GA-Q33	
C14	10000			12062	BPD-01	DD-103	BYA10S1	B-110	5HK-S1	
C15	10000			12062	BPD-01	DD-103	BYA10S1	B-110	5HK-S1	
C16	10000			12062	BPD-01	DD-103	BYA10S1	B-110	5HK-S1	
C17	2.0	100		12069	P282Z-2		WMF1W2E	GTM-12	118P20502S2	

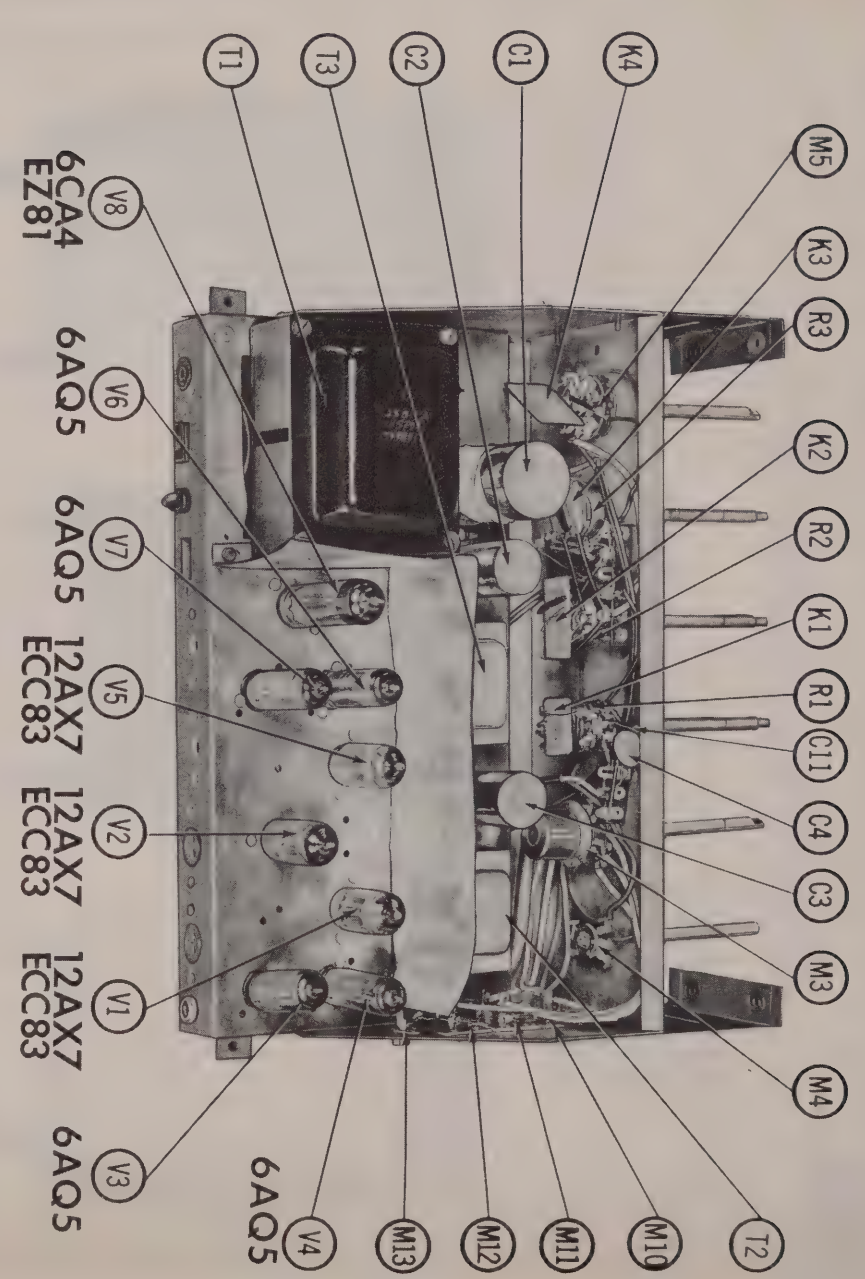
CONTROLS

ITEM No.	RATING		REPLACEMENT DATA					INSTALLATION NOTES
	RESISTANCE	WATTS	V-M PART No.	CENTRALAB PART No.	CLAROSTAT PART No.	IRC PART No.	MALLORY PART No.	
R1A	1meg *	½	12373					Loudness, Right Channel
B	1meg *	½						Loudness, Left Channel
R2A	1meg	½	12374				† UE4013	Bass, Right Channel
B	1meg	½						Bass, Left Channel
R3A	1meg	½	12372				† UE4013	Treble, Right Channel
B	1meg	½						Treble, Left Channel
R4A	150Ω	1(WW)	12361	WN-201	A43-150		C200P	Hum Balance, Left Channel
B	Shaft			AK-30	FKS-1/4		Not Req.	
R5A	150Ω	1(WW)	12361	WN-201	A43-150		C200P	Hum Balance, Right Channel
B	Shaft			AK-30	FKS-1/4		Not Req.	

* Taps ⓐ 350K, 650K

† "STA-LOC" equivalent: FB16L, RU16L, CS3625, IS4000 (Assemble With Terminals 180° apart)

CHASSIS—TOP VIEW



PARTS LIST AND DESCRIPTIONS (Continued)

RESISTORS

All wattages 1/2 watt, or less, unless otherwise listed.

ITEM No.	RATING OHMS	RATING WATT	V-M PART No.	NOTES
R6	1meg		11453	
R7	220K		11293	
R8	1000Ω		10733-10	
R9	220K		11293	
R10	6800Ω		10933-10	
R11	2200Ω		10813-10	
R12	1meg		11453	
R13	47K		11133-10	
R14	47K		11133-10	
R15	330K		11333-10	
R16	1000Ω		10733-10	
R17	330K		11333-10	
R18	1000Ω		10733-10	
R19	200Ω	5	12368-10	
R20	1meg		11453	
R21	220K		11293	
R22	1000Ω		10733-10	
R23	220K		11293	

ITEM No.	RATING OHMS	RATING WATT	V-M PART No.	NOTES
R24	6800Ω		10933-10	
R25	2200Ω		10813-10	
R26	1meg		11453	
R27	47K		11133-10	
R28	47K		11133-10	
R29	330K		11333-10	
R30	1000Ω		10733-10	
R31	330K		11333-10	
R32	1000Ω		10733-10	
R33	200Ω	5	12368-10	
R34	39K		11113-10	
R35	39K		11113-10	
R36	22K		11053	
R37	22K		11053	
R38	100Ω	5	12369-10	
R39	100Ω	5	12369-10	
R40	200Ω	5	12368-10	

COMPONENT COMBINATIONS

ITEM No.	USE	DESCRIPTION	V-M PART No.	REPLACEMENT DATA
K1	Loudness Tone Compensation	2000mmf, 2000mmf, 2000mmf, 2000mmf, 100K, 100K, 100K, 100K	18976	
K2	Bass Tone Compensation	10000mmf, 10000mmf, 1000mmf, 1000mmf, 100K, 100K, 10K, 10K	18974	
K3	Treble Tone Compensation	200mmf, 200mmf, 1000mmf, 1000mmf, 220K, 220K	18975	
K4	Rolloff Couplate	500mmf, 500mmf, 1000mmf, 1000mmf, 2000mmf, 2000mmf, 5000mmf, 5000mmf	18977	

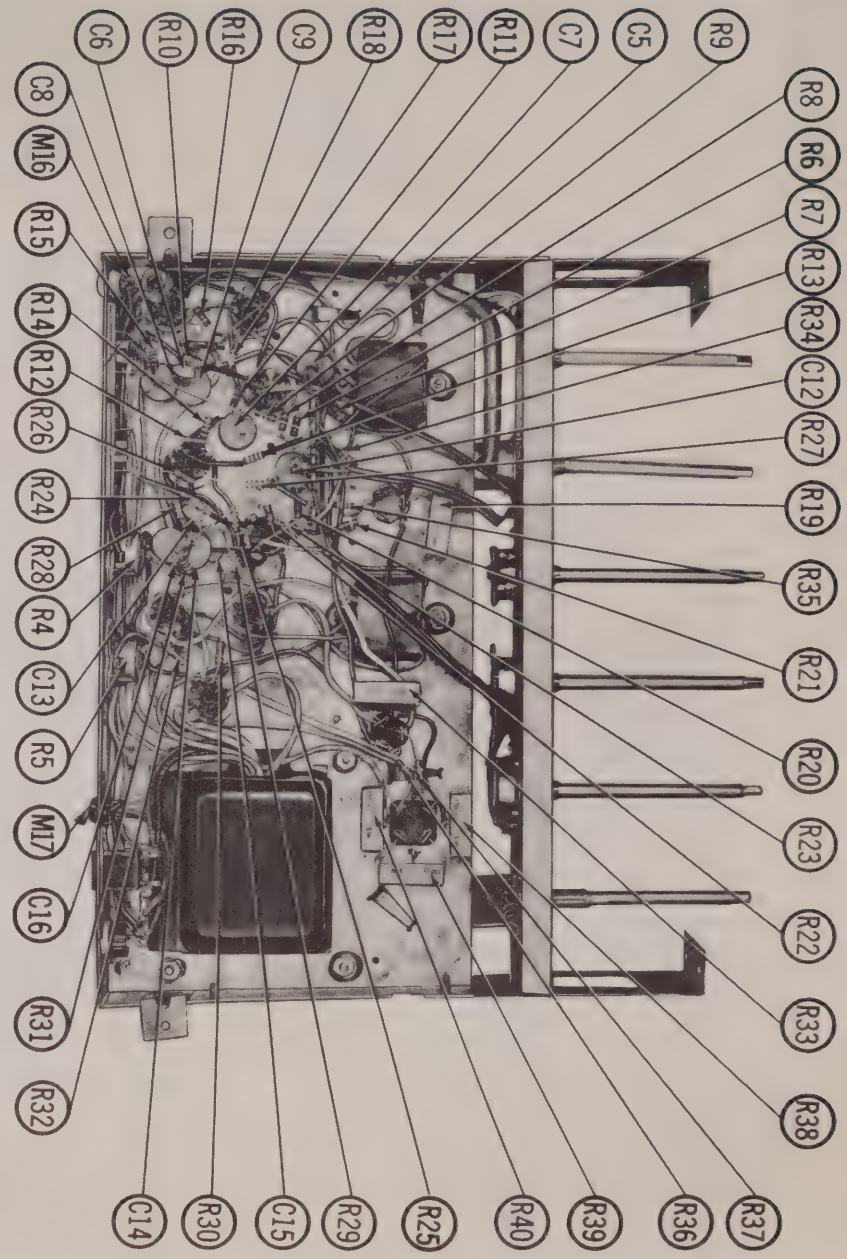
TRANSFORMER (POWER)

ITEM No.	RATING PRI.	RATING SEC. 1	RATING SEC. 2	REPLACEMENT DATA V-M PART No.	Halldorson PART No.	Merit PART No.	Ram PART No.	Stancor PART No.	Thordarson PART No.	Triad PART No.
T1	117V@ .87A	560 VCT @.145A	6.3V@ .9A	12587						
	SEC. 3	SEC. 4	SEC. 5							
	6.3V@ 1.7A	6.3V@ 1.8A								

TRANSFORMER (AUDIO OUTPUT)

ITEM No.	IMPEDANCE PRI.	IMPEDANCE SEC.	REPLACEMENT DATA V-M PART No.	Halldorson PART No.	Merit PART No.	Ram PART No.	Stancor PART No.	Thordarson PART No.	Triad PART No.	NOTES
T2	6100Ω CT	3-4Ω	12588-A	24S61①	A-2901①	AU-600①	A-3823①	24S61①	S-53X①	① Drill new mounting holes.
T3	6100Ω CT	3-4Ω	12588-B	24S61①	A-2901①	AU-600①	A-3823①	24S61①	S-53X①	

CHASSIS BOTTOM VIEW



PARTS LIST AND DESCRIPTIONS (Continued)

SPEAKER

ITEM No.	TYPE			REPLACEMENT DATA		NOTES
	SIZE	FIELD	V. C. IMP.	V-M PART No.	QUAM PART No.	
SP1	12"	PM	3-4Ω	18560-3	12A6A	
SP2	3½"	PM	9Ω	18558-2	3A15TZ9.8	
SP3	12"	PM	3-4Ω	18560-3	12A6A	
SP4	3½"	PM	9Ω	18558-2	3A15TZ9.8	

PHONO CARTRIDGE

ITEM No.	REPLACEMENT DATA						REMARKS
	V-M PART No.	ASTATIC PART No.		ELECTRO-VOICE PART No.		JENSEN PART No.	
		CARTRIDGE	NEEDLE	CARTRIDGE	NEEDLE	CARTRIDGE	NEEDLE	
M1	16708-B	13TB*						* Includes needle and mounting mechanism.

PHONO NEEDLE

(FOR REPLACEMENT IN ORIGINAL EQUIPMENT CARTRIDGE)

ITEM No.	REPLACEMENT DATA			REMARKS
	V-M PART No.	JENSEN PART No.	WALCO PART No.	
M2	18626-B	S-69X † or S-69XSD †♦ or S-69XDD ♦♦	W-103STSS † or W-103STDS ♦†	† Jewel ♦ Diamond

MISCELLANEOUS

ITEM No.	PART NAME	V-M PART No.	NOTES
M3	Switch	18969	Function, Off-Phono-Tape-Tuner-TV. (Rotary Wafer Type)
M4	Switch	19003	Monaural-Stereo (Rotary Wafer Type)

MISCELLANEOUS (cont)

ITEM No.	PART NAME	V-M PART No.	NOTES
M5	Switch	18970	Record Compensating (Rotary Wafer Type)
M6	Switch	467	Off-On (On Changer)
M7	Switch	16694	Muting, (DPST, Slide Type)
	Motor Ass'y.	18361	Complete
	Motor	9134	

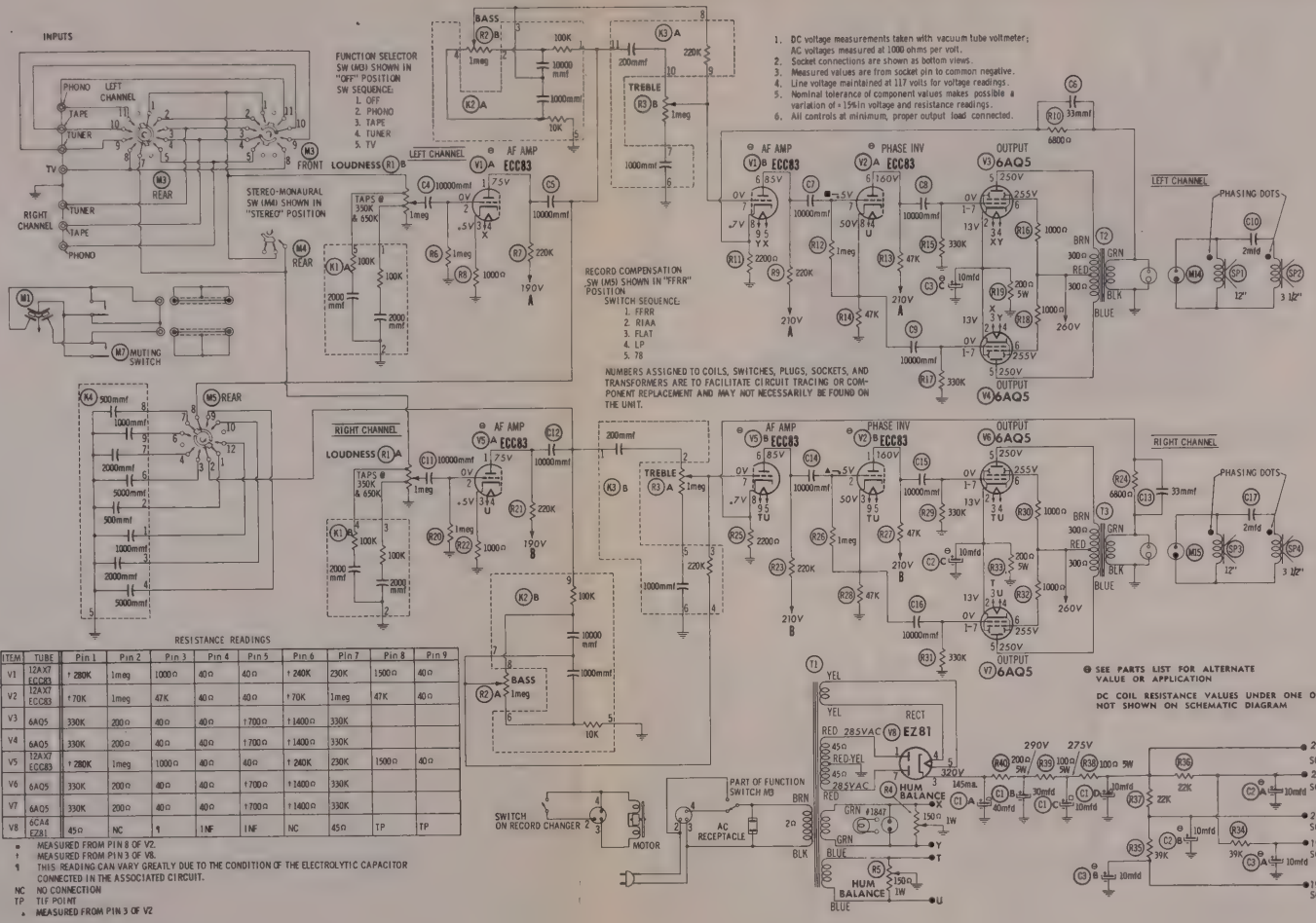
CABINETS & CABINET PARTS

(When Ordering Cabinets & Cabinet Parts, Specify Model, Chassis & Color)

NAME	PART NO.	DESCRIPTION
Knob	18987-B	Stereo-Monaural, Function, Record Compensating
Knob	18984-B	Treble, Bass, & Loudness (Left Channel)
Knob	18983-B	Treble, Bass, & Loudness (Right Channel)
Knob	16791-A46	Off-On, Reject (On Changer)
Knob	16792-A46	Speed Change
Cabinet	18903-W	Center Unit.
Cabinet	18904-W	Speaker Enclosure (Left Hand)
Cabinet	18905-W	Speaker Enclosure (Right Hand)
Legs	18907-A	Center Unit & Speaker Enclosures.

WIRING DATA

General-use Unshielded Hook-up Wire	Use BELDEN No.	8530 (Solid) Available in Ten Colors 8524 (Stranded) Available in Ten Colors
Power Cord	Use BELDEN No.	1765-B (6 Ft. Length) 1725-K (7½ Ft. Length)
Low-Loss Shielded Lead (Interconnecting)	Use BELDEN No.	8401
Phono Pick-up Arm Cable	Use BELDEN No.	8430 (Two Conductor - Twisted)



RESISTANCE READINGS

ITEM	TUBE	Pin 1	Pin 2	Pin 3	Pin 4	Pin 5	Pin 6	Pin 7	Pin 8	Pin 9
V1	12AX7 ECC83	†280K	1meg	1000Ω	40Ω	40Ω	†240K	230K	1500Ω	40Ω
V2	12AX7 ECC83	†70K	1meg	47K	40Ω	40Ω	†70K	1meg	47K	40Ω
V3	6AQ5	330K	200Ω	40Ω	40Ω	†700Ω	†1400Ω	330K		
V4	6AQ5	330K	200Ω	40Ω	40Ω	†700Ω	†1400Ω	330K		
V5	12AX7 ECC83	†280K	1meg	1000Ω	40Ω	40Ω	†240K	230K	1500Ω	40Ω
V6	6AQ5	330K	200Ω	40Ω	40Ω	†700Ω	†1400Ω	330K		
V7	6AQ5	330K	200Ω	40Ω	40Ω	†700Ω	†1400Ω	330K		
V8	6CA4 EZ81	45Ω	NC	¶	1NF	1NF	NC	45Ω	TP	TP

- ● MEASURED FROM PIN 8 OF V2.
- † MEASURED FROM PIN 3 OF V8.
- ¶ THIS READING CAN VARY GREATLY DUE TO THE CONDITION OF THE ELECTROLYTIC CAPACITOR CONNECTED IN THE ASSOCIATED CIRCUIT.
- NC NO CONNECTION
- TP TIE POINT
- ▲ MEASURED FROM PIN 3 OF V2

A PHOTOFACT STANDARD NOTATION SCHEMATIC

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V-M MODEL 580

PHOTOFACT* Folder

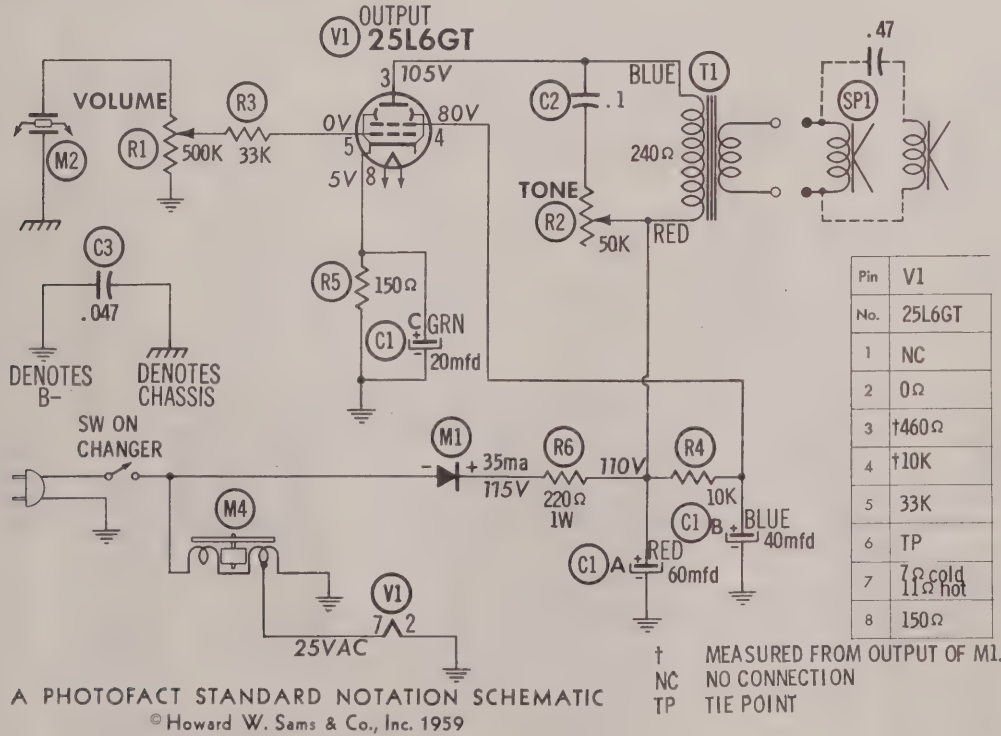
EIA MEMBER ELECTRONIC INDUSTRIES ASSOCIATION

WESTINGHOUSE MODELS H-40MP1, 2, 3, H-41MP1, 2

WESTINGHOUSE MODELS
H-40MP1, 2, 3, H-41MP1, 2

MODEL H-40MP1

TRADE NAME	Westinghouse Models H-40MP1, H40MP2, H40MP3, H-41MP1, H-41MP2
MANUFACTURER	Westinghouse Electric Corp., TV-Radio Div., Metuchen, N. J.
TYPE SET	AC Operated One Tube Phono Amplifier With 4 Speed Manual Record Player
POWER SUPPLY	110 - 120 Volts AC, 60 Cycles RATING 25 Watts, .24 Amp. @117 Volts AC (Less Motor)



Pin No.	V1 25L6GT
1	NC
2	0Ω
3	†460Ω
4	†10K
5	33K
6	TP
7	7Ω cold 11Ω hot
8	150Ω

† MEASURED FROM OUTPUT OF M1.
NC NO CONNECTION
TP TIE POINT

A PHOTOFACT STANDARD NOTATION SCHEMATIC

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JR016

SET 459 FOLDER 16

PARTS LIST AND DESCRIPTIONS

TUBES (GENERAL ELECTRIC, SYLVANIA)

ITEM No.	USE	TYPE	NOTES
V1	Output	25L6GT	

ITEM No.	USE	TYPE	NOTES

ELECTROLYTIC CAPACITORS

ITEM No.	RATING		REPLACEMENT DATA						NOTES
	CAP.	VOLT.	Westinghouse PART No.	AEROVOX PART No.	CORNELL-DUBILIER PART No.	MALLORY PART No.	PYRAMID PART No.	SPRAGUE PART No.	
C1A	60	150	CE-101		BBRT84215	WT407		*TVLS-3442.9	
B	40	150							
C	20	150							

* Not normally in distributor's stock. Available thru distributor on order to manufacturer.

FIXED CAPACITORS

Capacity values given in the rating column are in mfd. for Paper Capacitors, and in mmfd. for Mica and Ceramic Capacitors.

ITEM No.	RATING			REPLACEMENT DATA						NOTES
	CAP.	VOLT	TOL	Westinghouse PART No.	AEROVOX PART No.	CENTRALAB PART No.	CORNELL-DUBILIER PART No.	MALLORY PART No.	SPRAGUE PART No.	
C2	.1	400			P488N-1	DF-104	CUB4P1	GEM-401	4TM-P1	
C3	.047	400			P488N-047	DF-503	CUB4S47	GEM-4147	4TM-S47	

CONTROLS

ITEM No.	RATING		REPLACEMENT DATA					INSTALLATION NOTES
	RESISTANCE	WATTS	Westinghouse PART No.	CENTRALAB PART No.	CLAROSTAT PART No.	IRC PART No.	MALLORY PART No.	
R1A	500K	½	VC-208	B-60	A47-500K-Z	Q13-133	U48	Volume
B	Shaft			Not Req.	KSS-3	Not Req.	Not Req.	
R2A	50K	½	VC-156	B-31	A47-50K-S	Q11-123	U35	Tone
B	Shaft			Not Req.	KSS-3	Not Req.	Not Req.	

RESISTORS

All wattages 1/2 watt, or less, unless otherwise listed.

ITEM No.	RATING		Westinghouse PART No.	NOTES
	OHMS	WATT		
R3	33K			
R4	10K			

ITEM No.	RATING		Westinghouse PART No.	NOTES
	OHMS	WATT		
R5	150Ω			
R6	220Ω	1		

TRANSFORMER (AUDIO OUTPUT)

ITEM No.	IMPEDANCE		REPLACEMENT DATA							NOTES
	PRI.	SEC.	Westinghouse PART No.	Halldorson PART No.	Merit PART No.	Ram PART No.	Stancor PART No.	Thordarson PART No.	Triad PART No.	
T1	2350Ω	3-4Ω	TR-109	Z1101	A-3025	AU-605	A-3332	24S53	S-12X	

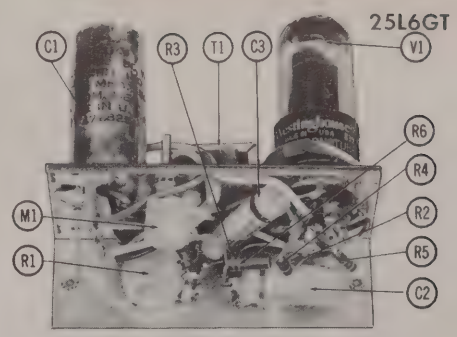
SPEAKER

ITEM No.	TYPE			REPLACEMENT DATA		NOTES
	SIZE	FIELD	V. C. IMP.	Westinghouse PART No.	QUAM PART No.	
SP1	4"	PM	3-4Ω	SP-401 ①	4A07	① Two used in Models: H-41MP1, 2

RECTIFIERS

ITEM No.	RATING	REPLACEMENT DATA					NOTES
	CURRENT (Measured)	Westinghouse PART No.	FEDERAL PART No.	GENERAL ELECTRIC PART No.	INTERNATIONAL PART No.	SARKES TARZIAN PART No.	
M1	.034A	SR-101 ①	1234AH ① HA154 ②		T065 ① SD-94 ②	65A ① K200 ②	① Selenium Type ② Silicon Type

CHASSIS-BOTTOM VIEW



PHONO CARTRIDGE

ITEM No.	REPLACEMENT DATA							REMARKS
	Westinghouse PART No.	ASTATIC PART No.		ELECTRO-VOICE PART No.		JENSEN PART No.		
		CARTRIDGE	NEEDLE	CARTRIDGE	NEEDLE	CARTRIDGE	NEEDLE	
M2	TS-314	314-TS K314-T *	N8-1 & N8-3					* Tone arm, with cartridge

ASTATIC NEEDLE LISTING SHOWN ABOVE IS SPECIFIED FOR THE RESPECTIVE REPLACEMENT CARTRIDGE LISTED. FOR ORIGINAL CARTRIDGE NEEDLE REPLACEMENTS SEE BELOW.

PHONO NEEDLE

(FOR REPLACEMENT IN ORIGINAL EQUIPMENT CARTRIDGE)

ITEM No.	REPLACEMENT DATA			REMARKS
	Westinghouse PART No.	JENSEN PART No.	WALCO PART No.	
M3	AS-300 (78 RPM)	† CRA-55 or ♦ CRA-55D	† W-64S or ♦ W-64D	† Jewel ♦ Diamond
	AS-100 (LP)	† CRA-55LP or ♦ CRA-55LPD	† W-64MGS or ♦ W-64MGD	

MISCELLANEOUS

ITEM No.	PART NAME	Westinghouse PART No.	NOTES
M4	Motor	M0-111	Manual, 4 Speed

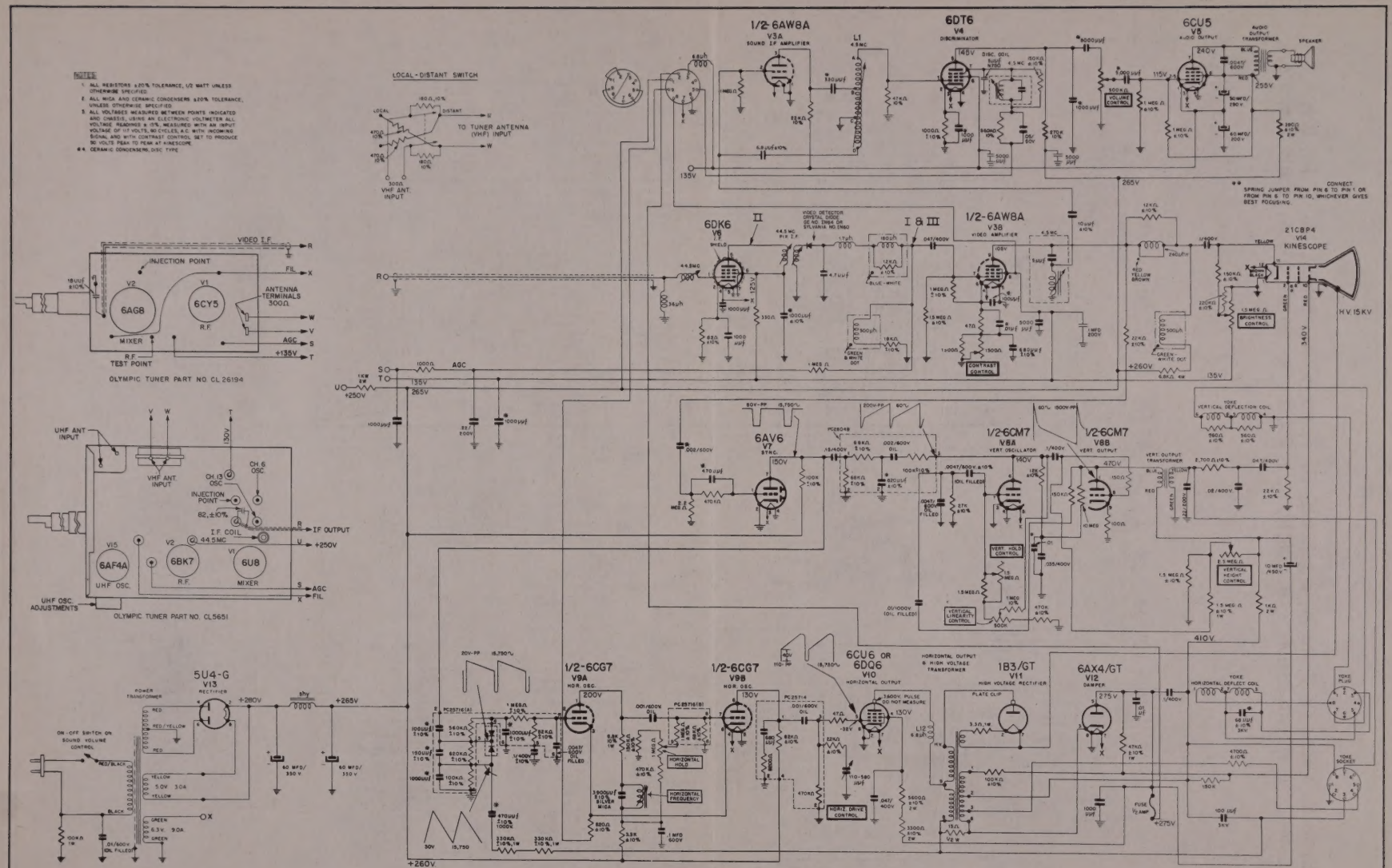
CABINETS & CABINET PARTS

(When Ordering Cabinets & Cabinet Parts, Specify Model, Chassis & Color)

NAME	PART NO.	DESCRIPTION
Knob	KN-279	Volume-On-Off, Tone; Models H-40MP Series
Knob	KN-275	Volume-On-Off, Tone; Models H-41MP Series
Cabinet	CB-401	Red And White, Model H-40PM1
Cabinet	CB-402	Black And White, Model H-40MP2
Cabinet	CB-403	Charcoal And White, Model H-40MP3
Cabinet	CB-411	Pigskin, Model H-41MP1
Cabinet	CB-412	Silver And Black, Model H-41MP2

WIRING DATA

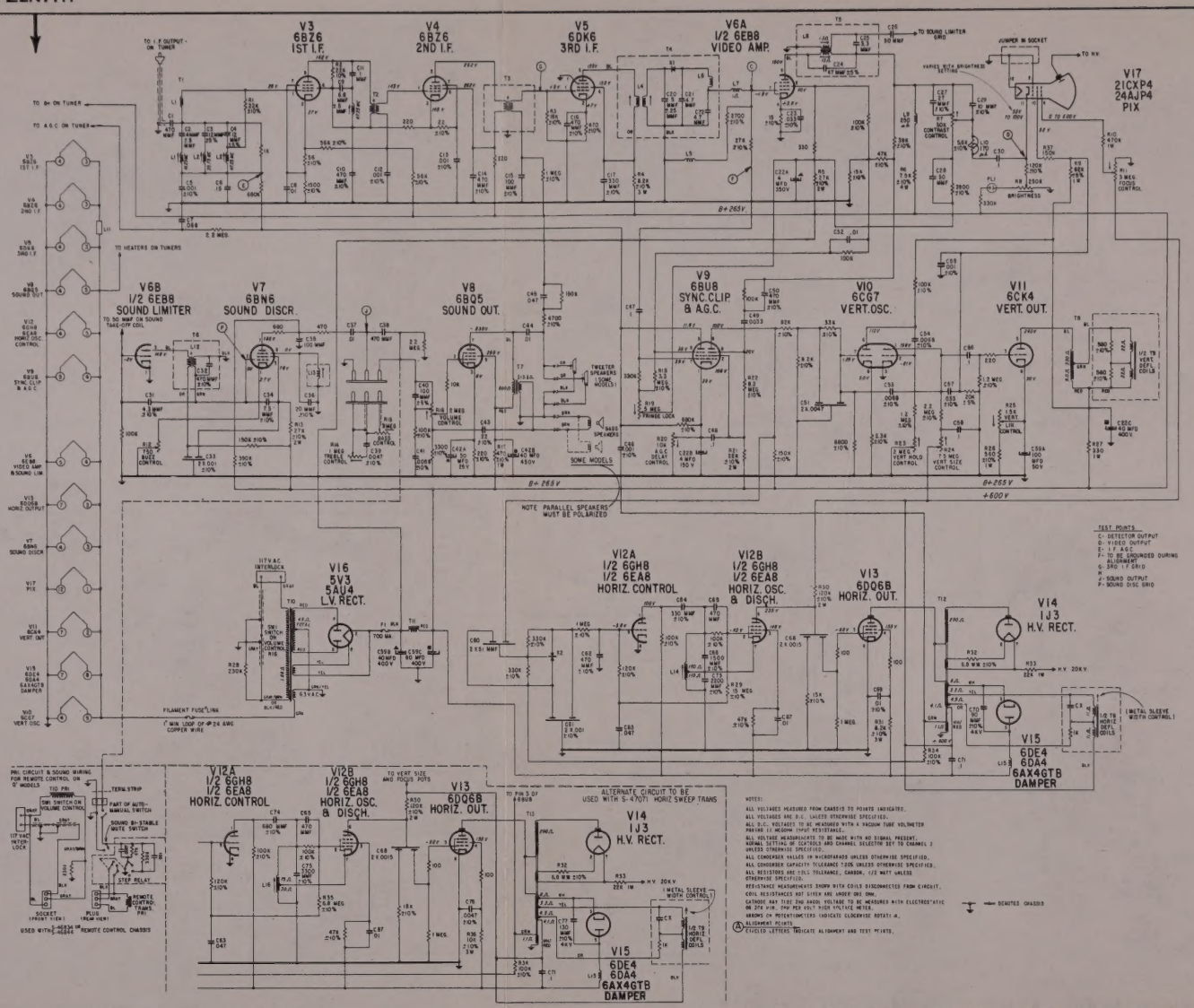
General-use Unshielded Hook-up Wire	Use BELDEN No. 8530 (Solid) Available in Ten Colors 8524 (Stranded) Available in Ten Colors
Power Cord	Use BELDEN No. 1765-B (6 Ft. Length) 1725-K (7½ Ft. Length)
Low-Loss Shielded Lead (Interconnecting)	Use BELDEN No. 8401
Phono Pick-up Arm Cable	Use BELDEN No. 8430 (Two Conductor - Twisted)



QLYMPIC MODELS KY147, U, TY134, U (CH. HY, HYU)

Schematic Diagram Courtesy of Olympic Radio & Television Inc.

Zenith Models D2430E, EU, R, RU, W, WU, D2458E, EU, R, RU, W, WU, D2460M, MU, R, RU, D2462H, HU, D2464L, LU, W, WU, D3010E, H, R, D3011E, W, Y, D3012H, R, D3013H, D3014W, D3015L (Ch. 17D20, 17D20Q)


V3 6BZ6 1ST I.F.
V4 6BZ6 2ND I.F.
V5 6DK6 3RD I.F.
V6A 1/2 6EB8 VIDEO AMP.
V17 21CXP4 24AJP4 PIX
V6B 1/2 6EB8 SOUND LIMITER
V7 6BN6 SOUND DISCR.
V8 6BQ5 SOUND OUT.
V9 6BU8 SYNC. CLIP. & A.G.C.
V10 6CG7 VERT. OSC.
V11 6CK4 VERT. OUT.
V16 5V3 5AU4 L.V. RECT.
V12A 1/2 6GH8 1/2 6EA8 HORIZ. CONTROL
V12B 1/2 6GH8 1/2 6EA8 HORIZ. OSC. & DISCH.
V13 6DQ6B HORIZ. OUT.
V14 1J3 H.V. RECT.
V15 6DE4 6DA4 6AX4GTB DAMPER
B+ 265 V
+600 V
NOTE PARALLEL SPEAKERS MUST BE POLARIZED
SOME MODELS
TWEETER SPEAKERS (SOME MODELS)
BASS SPEAKERS
TEST POINTS
C- DETECTOR OUTPUT
D- VIDEO OUTPUT
E- I.F. AGC
F- TO BE GROUNDED DURING ALIGNMENT
G- 3RD I.F. GRID
J- SOUND OUTPUT
P- SOUND DISC. GRID
ALTERNATE CIRCUIT TO BE USED WITH S-4707 HORIZ SWEEP TRANS
REMOTE CONTROL CHASSIS

Schematic Diagram Courtesy of Zenith Radio Corporation

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